

Current History

A WORLD AFFAIRS JOURNAL

AUGUST, 1970

OPTIONS FOR A CLEANER AMERICA

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Current History

AUGUST, 1970

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In this final issue of the 3-issue series devoted to our physical environment, seven authors speculate on our options for a cleaner America. Our first author examines our economic priorities and finds that in the future our society "will have to treasure and conserve every drop of water, every grain of material, every erg of energy, every bit of information, every impulse of goodwill. We are moving forward not into an age of abundance, but into an age of scarcity and economizing in which we are going to have to find a high quality of human life in the middle of a highly conservative and economizing social system."

A Look at National Priorities

By KENNETH E. BOULDING
Professor of Economics, University of Colorado

WHERE WE GO from here is very closely related to our perception of how we got here. We may be, of course, like the famous Irishman who asked the way to Dublin and was told, "If I was going to Dublin, I wouldn't start from here."

We have no experience of the future. The only way we can look into the future at all is by contemplating our image of the past to see if the patterns which are revealed in it may project themselves into the future. Then, if there are things that we do not like about the past, we may be able to create a future which is more to our liking by understanding the relationships of the past. It is only by understanding these relationships that we can hope to choose from among alternative possible futures the one that suits us best. All choice concerns the future, but all knowledge is derived from the past. Many human dilemmas arise out of this inescapable truth.

Let us begin then with a brief voyage to

the past by way of national income statistics, which have been compiled in the United States ever since 1929. Figure 1 shows the overall magnitudes. We start off with the line A'A which represents what I call the Gross Capacity Product of the United States from 1929 to 1969, in current dollars—that is, in its dollar value at the price level of each year. The Gross Capacity Product is roughly what the Gross National Product would have been if there had been no unemployment.

The line B'B shows the Gross National Product in these 40 years. The vertical distance between A'A and B'B in any one year is a measure of the amount of unemployment. The line B'C shows the Gross National Product at 1929 prices. The vertical distance between B'C and B'B in any year is the amount of inflation that has taken place since 1929. B'C shows the Gross National Product in real terms—that is, in terms of quantities of goods and services. Part of this, however, is absorbed for what might be called non-personal uses by government; line D'D, there-

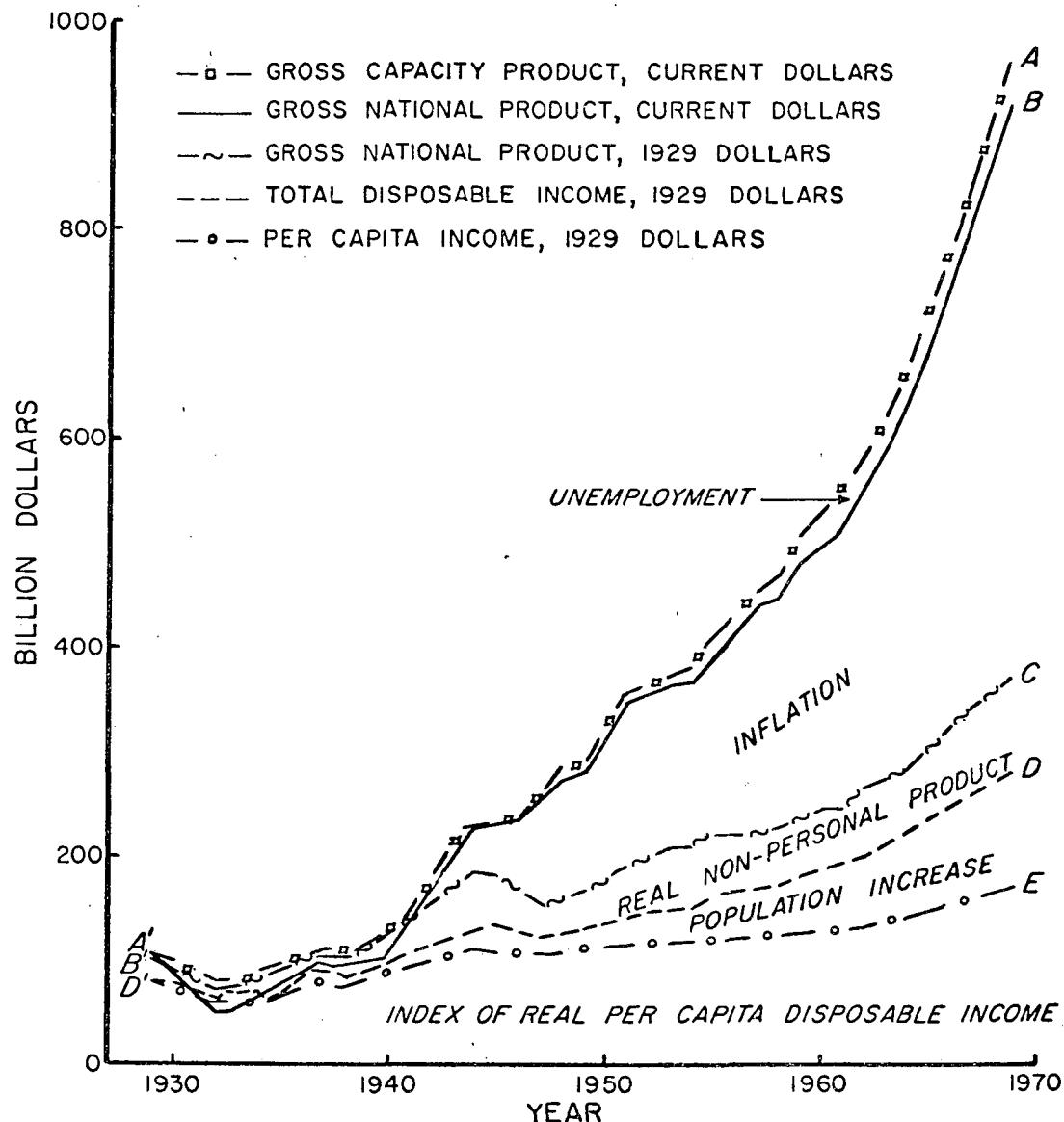


Figure 1. Components of the Gross Capacity Product, 1929-1969

fore, shows the total personal disposable income. The vertical distance between B'C and D'D shows how much of the Gross National Product was absorbed by non-personal uses.

The line D'E shows per capita personal disposable income, which is perhaps the best measure of how rich the average American is. The vertical distance between the lines D'E and D'D shows how much of the rise of total disposable income has been due to

increase in population in this period. We see that, although the Gross Capacity Product has increased about 9 times in these 40 years, the per capita disposable income has only about doubled; the average American in real terms today is about twice as well off in terms of his capacity to buy goods and services as was the average American 40 years ago. This means that we are less than twice as well off as our fathers and more than twice as well off as our grandfathers.

We now need to look at the proportional structure of the economy. This is shown in Figure 2, which reveals dramatically a good deal of the history of the United States in the last 40 years. The total economy is again defined as the Gross Capacity Product which

is here taken as 100 per cent. This 100 per cent is then divided into seven categories. Unrealized Product is at the top, and is defined to be the same proportion of the Gross Capacity Product as the proportion of unemployed persons in the total labor force.

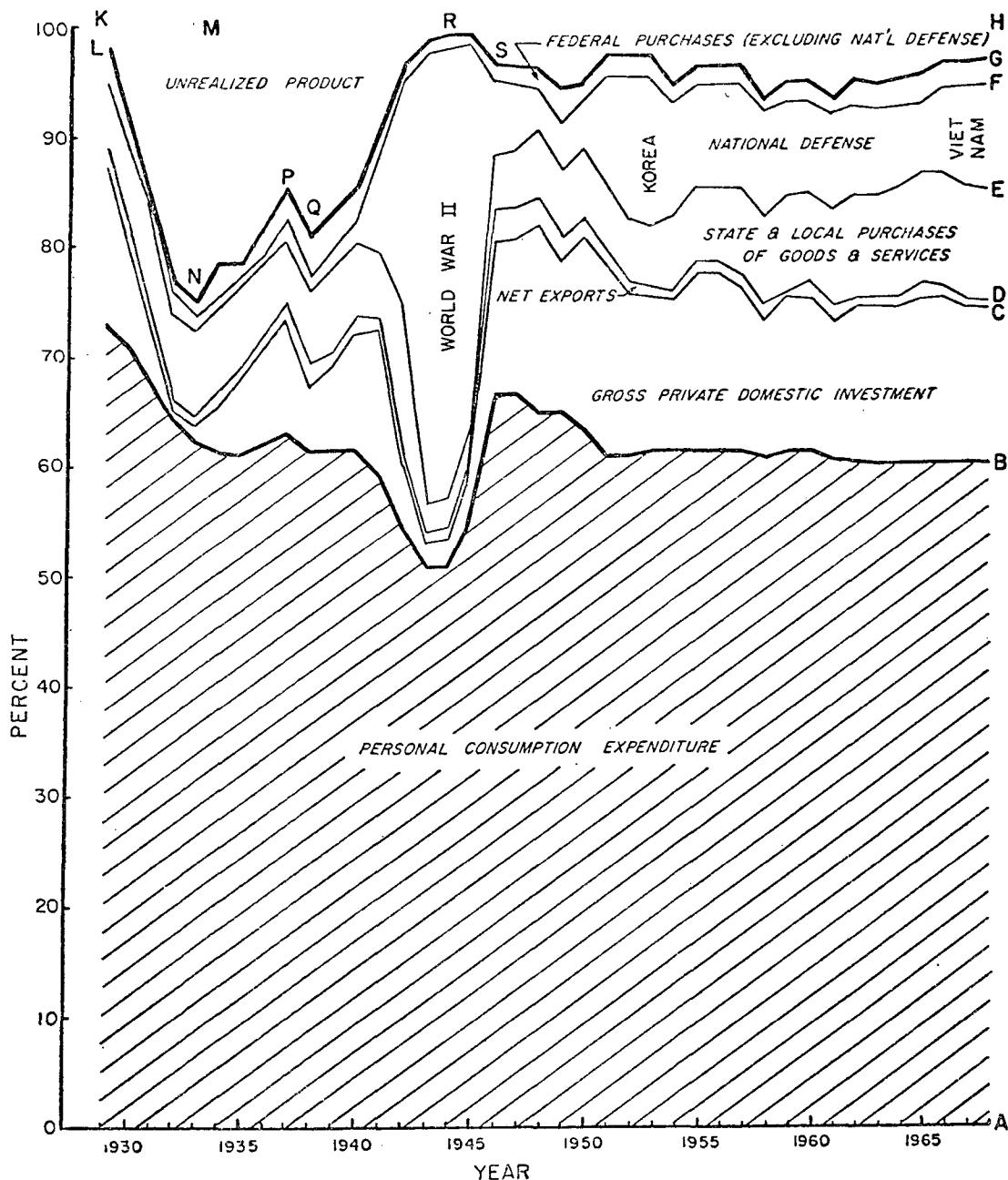


Figure 2. Unrealized Product and Major Components of GNP as a Per Cent of Gross Capacity Product

Then we have Federal Civilian Purchases and National Defense, State and Local Purchases of Goods and Services, Net Exports, Gross Private Domestic Investment, and Personal Consumption Expenditure.

We see dramatically how the first 20 years of this period marked a period of great upheaval with the Great Depression in which unemployment went to 25 per cent by 1932, and the Second World War, in which the national defense sector went to nearly 42 per cent by 1944. We see the great disarmament of 1945 in which we turned over almost 30 per cent of the economy from the national defense sector to civilian uses without unemployment ever rising above 3 per cent. We see the brief period of the relatively civilian economy from 1945 to 1950, and then what might be called the "cold war economy" which we have had since then.

We see that from about 1950 the proportional structure of the economy has been astonishingly stable, with unemployment between 4 and 6 per cent, national defense about 8 to 10 per cent, gross private domestic investment about 16 per cent, and personal consumption expenditure astonishingly stable at about 61 per cent. We see there has been a slight rise in state and local purchases. We see also the relative insignificance of net exports—that is, the annual increase in American capital invested abroad. It is clear that the American economy is still very heavily concentrated in the domestic scene, for all the talk about American economic imperialism.

We must be careful to note that Figure 2 shows how the total real product was absorbed by the various sectors. It tends to underestimate somewhat the total impact of government on the economy, because a substantial proportion of government payments consists of transfer payments, which show up mainly in Personal Consumption Expenditure. This includes such things as Social Security payments, veterans' benefits, welfare payments, and so on, all of which amounted to about 6.6 per cent of the Gross Capacity Product in 1969, and only 1.4 per cent in 1929.

NATIONAL INCOME SHARES

Another important aspect of the society is shown in Figure 3, which shows the distribution of the National Income among various components of its recipients, with National Income as 100 per cent. For purposes of comparison we show at the top of the diagram National Defense, plus Unrealized Product, as proportions of the Gross Capacity Product, these having been the two principal disturbing features of the period. We see here how in the Great Depression corporate profits completely disappeared and became negative, being squeezed out by the rise of net interest and labor income (Compensation to Employees). Net interest rose as a result of the great deflation—money interest payments stayed up remarkably well, but because of about a halving of the price level, the real burden of these interest payments increased enormously. The rise in the proportion of National Income going to employees was a result, rather than a cause, of the disappearance of profits. We remember, however, that in 1933 about 25 per cent of the working force was unemployed, and it was only the 75 per cent who were employed who benefited by this redistribution.

After the Great Depression, the relative stability of the proportional shares is very striking. The Second World War, surprisingly enough, produced a small squeeze on Profits and a rise in Compensation to Employees. We see how the Income of Farm Proprietors has been diminished. This is not because farmers are poorer, but because they are fewer. There has been a remarkable decline in the proportion of the Gross National Product devoted to agriculture, as a result of the phenomenal technological advance in agriculture in this period. We can now feed ourselves with less than half the number of farmers that we needed 40 years ago. Apart from this, the distributional shares are remarkably stable, especially in the face of substantial increase in the total real value of the National Income itself. We should notice, incidentally, that the National Income concept is far from satisfactory. It is roughly equal to the Gross National Product minus

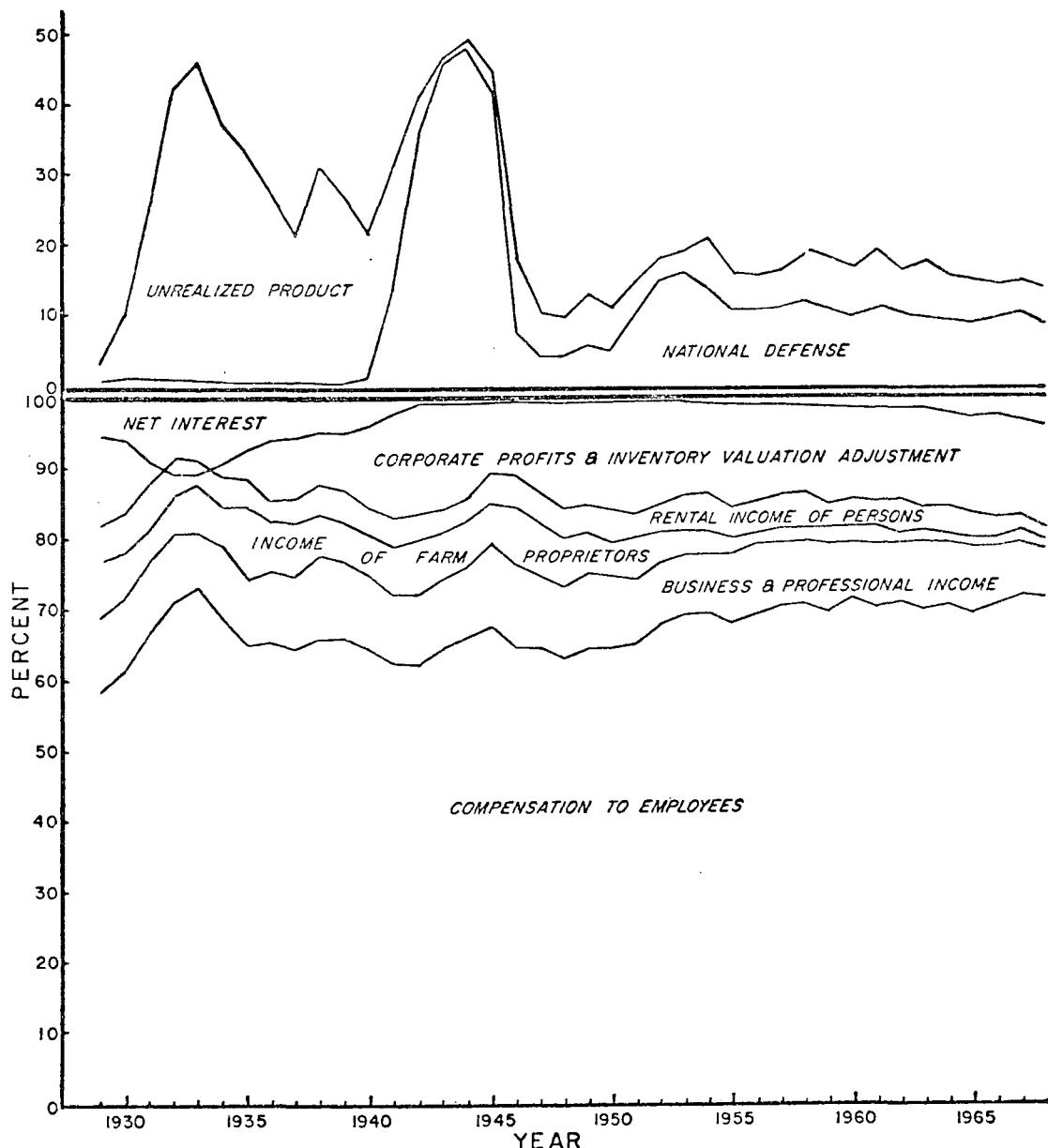


Figure 3. Components of National Income, and National Defense and Unrealized Product as a Per Cent of National Income

capital consumption allowances (that is, depreciation), minus indirect business taxes, with a few minor adjustments. It would be much better to have the distribution of National Disposable Income with direct taxes subtracted. However, this does not seem to be available.

Figure 4 then shows how the components

of Personal Consumption Expenditure have changed in their proportions in these 40 years. The most noticeable change is the decline in the proportion of expenditures devoted to food, clothing and shoes and an increase in durables. This does not mean, of course, that we are less well fed or clad than we were in 1929. It simply means that we

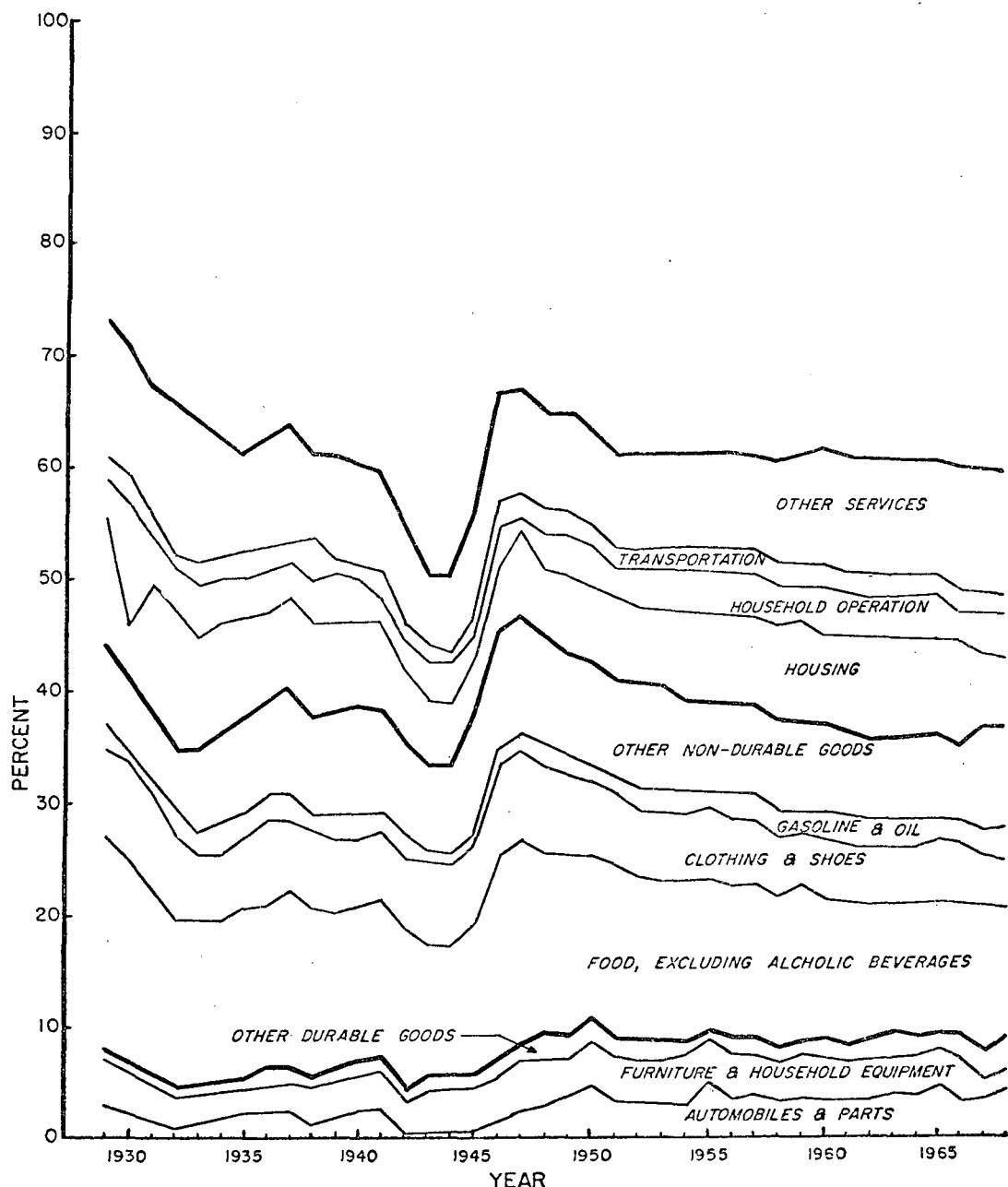


Figure 4. Personal Consumption Expenditure as a Percent of Gross Capacity Product

are about twice as rich as we were then. There is a very fundamental principle in economics known as Engle's Law, which says that the proportion of income devoted to basic necessities tends to decline with increases in income, and this is very noticeable in this period. It is, however, because of

the release of resources—especially the labor force in agriculture—that we have been able to do this.

The information contained in these figures is remarkably revealing, but it does not, of course, tell the whole story. We need to know more, for instance, about the distribu-

tion of income by size groups, classes and races, and we need to know more about the distribution of ownership of capital and debt. We need to know much more also about what has been happening to the total environment —a fact which is not revealed in national income figures.

Some parts of the environment have been improving. The 1930's saw a great environmental crisis in soils. In the drought years of the mid-1930's, dust storms blew away considerable portions of the top soil of the Great Plains, and soil erosion was a serious problem, particularly in the hilly areas of the country. The Soil Conservation Act of 1935 had a great impact and must be counted a substantial success. We have not had a recurrence of the great dust storms, and the spread of contour plowing has changed the whole appearance of the American landscape (especially as seen from the air) and has been part of the enormous technological revolution in agriculture. Pollution of the atmosphere, especially over cities, and of rivers and lakes, however, has now become a very serious problem, as the current interest and excitement about the environment reveals.

THE FUTURE

Suppose now we turn our glance from the past to the future and ask ourselves: what may we run into in the next 40 years? How far will history repeat itself, and to what extent have we moved into a new system in which the future will be different from the past? Many of these questions we can only answer speculatively. Exact prediction of social systems is impossible, simply because they involve knowledge in an essential way, and we cannot predict the future of knowledge, because if we could predict it we would know it now. We always have to be prepared for the unexpected. Nevertheless, we are not wholly ignorant and our perception of the patterns of the past at least enables us to ask interesting questions about the future.

We can ask, for instance, are we likely to have another great depression? The answer to this is probably no, simply because we know so much more about the economy and

how to control it than we did in 1929. We can see clearly from Figure 2 that the Great Depression was a result primarily of the disappearance of Gross Private Domestic Investment and a corresponding disappearance of profits, which produced a system which can be technically described as "deviation amplifying positive feedback." That is to say, reduction of investment reduced profits, which caused a further decline in investment, which produced a further decline in profits, which produced a further decline in investment, and so on, until the debacle of 1932, when both investment and profits were close to zero. If taxes had been reduced, government expenditure expanded, and interest rates lowered in 1930, the Great Depression could easily have been avoided.

Nevertheless, one cannot help being a little uneasy as one looks, say, at the next 10 or 20 years. Domestic investment, which represents an increase of the capital stock, cannot rise forever. If the rate of growth of population declines, as has been happening and may happen even more, and as the capital stock continues to increase, the desirability of further increases diminishes, and it is quite likely that Gross Private Domestic Investment will decline as a proportion of the economy. If we are then to prevent unemployment, we will have to expand the other components of the economy, such as private consumption, which could be done quite easily, as it is now only 61 per cent of the Gross Capacity Product, whereas in 1929 it was 72 per cent. We could also expand the government sector which has already been expanding substantially, but which has not necessarily reached its limit of useful expansion. Even though we can adjust to what might be called a slow growth economy without real difficulty, it is a real question as to whether we will have the wit to do so, in view of the fact that the public at large and the major decision-makers do not yet have the kind of knowledge which would enable them to make the right decisions.

Another very acute problem for the future is that of national defense or the "war industry." The rise of the war industry in the

last 40 years is the largest single structural change in the American economy. It has risen from 0.6 per cent of the Gross Capacity Product in 1929 to about 9.0 per cent in the late 1960's. In the Second World War it made up over 40 per cent of the economy. A major war in the next 40 years will unquestionably have a much more disastrous effect on the society than the Second World War. A nuclear war, especially, would have incalculable effect on the whole ecological system and might well be an irretrievable disaster. Even without this, the war industry represents a very serious drain on the resources of the world, and even in the United States the drain is much more serious than is indicated by the mere 9 per cent figure, mainly because it represents a much more serious qualitative drain on high-level manpower problem-solving capacity. A great deal of our incompetence in solving the problems of the civilian economy arises out of the fact that so much of our problem-solving capacity is locked up in the war industry.

A further important element in the situation is that from now on the war industry represents almost the only available source of labor supply for new developments in the civilian economy. In the last 40 years we have been able to expand the war industry and increase our standard of life at the same time, mainly because of the very large resources released from agriculture by its technological improvements, plus the improvements in productivity in manufacturing, although these have been not so great. In the next 40 years, not much labor supply will be released from agriculture. Even if agricultural productivity doubles in this period, this would not release more than about three per cent of the labor force for other purposes. If we want more "goodies," therefore, we must reduce the war industry, or improve productivity in manufacturing. This may happen, of course, as the result of automation, but there is not much evidence at the moment that automation increases productivity beyond the usual two to three per cent per annum. The control of the international

system and the world war industry, therefore, must be listed as the major priority of the human race in the next 40 years, not only because an international system based on deterrence is inherently unstable in the long run (for if deterrence were stable it would cease to deter), but also because the world war industry is an intolerable drain on resources which are desperately necessary to achieve the transition into a developed world society.

We must think of the next 40 years as perhaps one of the most crucial periods in the whole history of the human race. We have had a spectacular "takeoff" into science and science-based industries, which we call "development." Now, however, we face what I have been calling the problem of "reentry" into spaceship earth. We have to develop a whole new technology, based on the recycling of materials, rather than on the exploitation of exhaustible resources.

One problem here is that it is extremely hard to predict the future of investment in the production of new natural resources and in the improvement of environmental quality. Up to now, investment in the production of new natural resources, such as fossil fuels, new metals and new minerals, has been very successful. After a century or more of rapid exploitation of natural resources it is possible that we have more today than we had then, simply because of the increase in human knowledge.

It is a very real question, however, how long this can go on. There is obviously some ultimate limit on the production of energy from oil, coal, uranium and so forth, although if we should succeed in solving the problem of producing energy from nuclear fusion, this

(Continued on page 111)

Kenneth E. Boulding has taught at many universities including Colgate, McGill and the University of Michigan. Among the most recent of his many books are *Beyond Economics* (Ann Arbor: University of Michigan Press, 1968), and *Peace and the War Industry* (Chicago: Aldine, 1970), of which he is the editor.

"An estimate of the cost of eliminating environmental disruption is not easy to make. . . . Even if it is assumed that we know what standards we want to attain, it is still hard to project meaningful figures. Treatment technology is as yet relatively primitive. Technological breakthroughs could reduce costs significantly."

The Costs of Fighting Pollution

By MARSHALL I. GOLDMAN
Professor of Economics, Wellesley College

WE ARE BEGINNING to realize that control of environmental disruption is a complicated and expensive undertaking. Part of the difficulty has been that Americans have often been unsure just what goal they were pursuing. Some were seeking purity of air or water without realizing that there is no such thing. Some were concerned only about air or only about water without understanding that the environment must be considered as a coordinated whole. Thus undue concentration on cleaning up the air often leads to a dirtying of the water. Only recently has there been a broader awareness of the self-contained nature of our ecological system. The output of a process becomes the input for a subsequent operation. When one of the outputs of a process is released in such quantities that it cannot be absorbed adequately as an input by other processes, we normally end up with environmental disruption (ED).

Although other articles in this series have covered the same ground, it is necessary to recount briefly the causes of ED in order to understand the magnitude and potential costs of the possible solutions. First, there is the population explosion. Paul Ehrlich of Stanford University points out that it took 200 years for the world's population to double between the years 1650 and 1850. The next

doubling took only 80 years and now it will take only 35 years. Moreover, it is not just that there are more of us, but that we are clustered in ever more compact areas. Kingsley Davis estimates that 40 per cent of the world's population lives in urban areas.¹ Fifty per cent of the urban dwellers live in cities of 100,000 or more. More people mean there are more wastes to recycle. The concentration of people and their accompanying wastes makes the task all the more difficult. Currently, this has led to the especially serious buildup and concentration of phosphates and nitrates. This in turn creates abnormal plant growth in water bodies and leads to eutrophication.

Along with the population growth and concentration has come the industrial revolution. Just as the bulk of the world's population growth has come primarily in recent years, so the greatest economic growth has taken place since the mid-nineteenth century. Increased production has necessitated an ever-increasing absorption and alteration of natural resources, including air and water. On the one hand, this often results in undesired by-products of little or no apparent value, such as slag, scrap and discharged air and water. On the other hand, this leads to final products that are intended for consumption, but the process of consumption itself almost inevitably leads to the further breakdown and disposal of the consumed products.

¹ Lord Ritchie-Calder, "Mortgaging the Old Homestead," *Foreign Affairs*, January, 1970, p. 219.

Ultimate disposal may result in the disintegration of a product into its elemental components as with the digestion of food or the burning of fuel. Even if the product is utilized (as a piece of furniture, a car, a television set), ultimately it too will be discarded in some form—usually as junk. In large cities, this results in hard-to-dispose concentrations of solid waste.

It is not just that there are more of us and that each of us consumes more per capita than our fathers and grandfathers, it is also that what we consume is more complex in its material makeup. Each day, products of an ever more exotic and synthetic nature are invented and distributed. Frequently these newly-discovered compounds are not biodegradable or readily broken up into easily digestible or disposable by-products. We may live better thanks to chemistry but the products that result live on after the users are gone. Thus we take aluminum cans as a sign of progress even though the aluminum does not rust or dissolve as the old tin cans did. Detergents, DDT and nonreturnable bottles, other forms of "progress," are similarly resistant to decomposition and recycling. Recently it has been discovered that compounds used in plastics such as PCB (polychlorinated biphenyls) may be as menacing as DDT.²

These tendencies are intensified by the unsuitability of the economic mechanisms at work in the world. The economic tools that man uses are generally not designed to cope with ED. Economic decision-making units in both capitalist and Communist societies that rely on prices and markets for guidance in determining what inputs to use and what outputs to produce are usually oblivious to the ED they create.

This situation is not so much the result of a malevolent conspiracy as a consequence of the fact that the market system only recognizes what economists call "private costs." That is, a manufacturer only worries about the inputs for which he has to pay a price.

² Robert Rissbrough with Virginia Brodine, "More Letters in the Wind," *Environment*, January, 1970, p. 16.

Assuming that all the factors of production have the same productivities, manufacturers will tend to use more of those factors of production which are cheaper. If wages, for example, are cheaper than rents, he will use more labor than land. In other words, given a certain level of production, a manufacturer will use that mix of inputs that will cost him the least.

SOCIAL COSTS

Unfortunately, in the normal market system there is usually no way to impose a satisfactory private charge for clean air and water or dirty air and water. But to society as a whole air and water do have a value. Economists call this a social value. Pollution of the air and water therefore constitutes a wasting of that value, or as we say, a "social cost." As opposed to private costs, social costs are those expenses that are borne by society as a whole, not by the individual. Social costs are expenses that manufacturers, farmers, householders and governments can push off onto their neighbors. If there were some way to apportion the social cost of using water and air to the user, then the manufacturer would be cautious in his consumption of air and water. He would use only that amount he himself was prepared to pay for from the revenue he obtained from the process of production. Without exception, this would result in the reduced consumption of air and water.

Because we are usually unable to charge for social commodities like air and water, we end up treating them as free goods. But anything that is free is usually consumed with no concern for the future or the amount left over. In other words there is no attempt to "economize." Thus if we have free air and water, we run the risk of exhaustion. As we have seen, air and water and some land facilities tend to be abused and overused. In addition, everyone tries to pass along the social cost of dirty air and water to society as a whole.

The transfer of social costs to others is effected by almost everyone. It is not just the other fellow who pollutes. For example, has

the reader ever burned leaves or trash in his backyard? Has he ever put salt on his sidewalk? Does he use coal or cheap oil to heat his home instead of gas? All of these actions contribute to ED but usually it is cheaper to burn in our backyards than hire someone to haul our leaves and trash to the dump, and we burn high sulfur fuel because it is cheaper also.

It is necessary to stress here that everything that has been said so far applies to all economic systems that use a price system and have been affected by industrialization. This is nothing that is peculiar to capitalism. Thus no one has been able to break down social costs in the U.S.S.R. Consequently, Soviet enterprises and Soviet cities are held responsible only for their private costs. Like us, therefore, they overconsume their air and water. Similarly, the U.S.S.R. has been caught up in a population explosion and concentration. Moreover, the Soviets tend to worship the cause of industrialization as much as or more than we do in the United States.

The inability to assign these social costs to private polluters inevitably provides a financial benefit for the polluters and in effect penalizes the public-spirited citizen who decides voluntarily to hold down his wastes. This helps to explain why laws prohibiting pollution are so regularly violated. Even if a penalty is imposed, the polluter often finds it economically advantageous to pollute. His private costs plus the penalty are usually still less costly to him than if he had to clean up the pollution himself.

Compounding these difficulties is the worldwide practice of splitting responsibility for the various forms of ED. Seldom if ever is there any clear line of responsibility. As a result, each governmental jurisdiction fights to enhance its own prerogatives. Those agencies concerned about water pollution generally ignore the effects of their activities on air pollution. A prime example of this lack of coordination is the practice of dumping the remains of the water treatment process from the cities in New York and New Jersey into New York Harbor. Although this is one way of solving a solid waste problem, it has

created a dead sea in New York Harbor that it is feared will pollute the sea coasts and ocean waters.

Together these factors lead to the conclusion that we are facing something we can call "the Doomsday Principle"—there may come a day when we will run out of usable air and water. Thomas Malthus, the English economist, used to worry that the world would run out of food. He argued that population was growing at a geometric rate but that food production was increasing at only an arithmetic rate. But at least food production was increasing! In retrospect, it appears that he may have been worrying about the wrong issue. He should have focused his concern on the world's fixed air and water supplies. In the long run, it is probable that with a growing population, the consequences arising from a fixed air and water supply will be greater than those arising from the slow-growing (but nonetheless growing) food supply.

SOLUTIONS

The first and most logical solution for ED is to halt the growth of the world's population. Ideally, there should be a fall in the size of the population to reduce the pressures on the raw materials (including air and water) in our environment. This alone would not guarantee success but it would make the implementation of other proposals easier. Similarly, it would also be of help if the population could be somewhat scattered. The intensive concentration of population in specific areas increases the difficulty of disposing and reconstituting waste air, water and solids. Nature is better able to facilitate the decomposition and recycling process if it has small rather than large amounts of man-made waste to contend with.

Reducing or halting our population growth will not come easily but it would be aided by proper economic and legal measures. Thus, some parents might be dissuaded from having more than two children if they were allowed no more than two dependency deductions on their income tax. Conceivably they might even be made to pay special taxes if

they had more than three children. In much the same way, income taxes might be higher for those who live in cities of over one million people.

The same combination of economic and legal measures could deal with the ED that is created by industry and agriculture. To make up for imperfections in economic processes, it is not enough to pass laws and impose fines. First, the laws have to be reasonable so they can be implemented and enforced and second, the fines have to be large enough to induce compliance (i.e., by making it cheaper for the potential violator to clean up the waste himself).

Normally, the use of laws and fines is not a particularly efficient method of improving the quality of air and water. Fines are usually arbitrary and rigid. Instead of enacting penalties, it would be better to adjust economic processes so that they could be more responsive to the social costs that arise in the course of production. Ideally, the economic charges should be built right into the production process so that those who create the social costs are obligated to include them in their private cost calculations.

This is difficult to do regardless of political ideology. Conceivably the intake of air and especially of water could be measured or metered. The difficult task comes in measuring the deterioration that has taken place in the discharged air and water. This requires sophisticated monitoring and measuring equipment. Moreover, even when the effluent can be measured, there still remains the task of determining what should be paid for the damage. In those cases where the water and air must be reprocessed before they can be used again, such costs may be measured without too much trouble. In most instances, however, it is extremely difficult to measure the loss suffered from a contaminated beach or a smoggy view of a mountain. Yet clearly these are costs that must be acknowledged and paid for in some way by those who create them.

Usually it is hard to generate much concern about tracking down most types of social costs. The effects are spread over such a

wide area and affect so many people that no one individual suffers enough damage to induce him to exert the effort needed to seek out and collect from the offender. Furthermore, the compensation that might be obtained from suing the offender and preventing future damage may not be worth the effort and cost involved.

There are exceptions. This becomes apparent if we divide the social costs into two categories: those that fall on the population as a whole and those that fall primarily on other producers. When the social cost of an operation is spread thinly over the entire area, no one may feel sufficiently damaged to take corrective action. However, if the smoke or discharged water from a particular factory moves downwind or downstream to an adjacent factory, the adjacent factory may feel the effects so severely that the polluted air or water becomes a direct cost of operation. In this case, the downstream or downwind factory is more likely to take action to force the offender to absorb and bear his own social costs.

This can lead to some peculiar situations. The Everett Station of the Boston Edison Company draws on water from the Mystic River for use in its boilers and for cooling. Unfortunately, a Monsanto chemical plant is located slightly upstream from the generating plant and discharges various chemical wastes into the Mystic River. This makes it necessary for Boston Edison to provide extra treatment for the water it uses. Therefore Boston Edison supports all efforts to force Monsanto to clean up its effluent. At the same time, however, Boston Edison drags its feet when others urge a reduction in sulfur and particulate content of the air discharged from its chimney stacks. To do this, it argues, would increase its costs of operation.

INTERNALIZATION

Assume that we know what it would cost to eliminate ED. How could we use this information to make the offenders pay for their disruption? The approach most often suggested is called "internalization"—the creator of ED is made to take on himself (or

internalize) the costs of his actions which have previously been passed along to society. The first step in this process would be to require that all units—households, factories, farmers, schools, cities and army bases—pay for all the water and air they use. In many parts of the country, a charge is levied for the amount of water used, but this is far from universal. Thus, most residents of New York City have no water meters and to all intents and purposes water is free. Moreover, in other parts of the country, many enterprises and homes have their own private wells. Except for the cost of digging the well, nothing is paid to society for the use of this water. If the measurement problems could be solved, presumably the same type of charge should be applied to the amount of air used and the amount of dirty air and water discharged.

If charges could be set so they would reflect both private and social costs, this would stimulate the reuse and recycling of water and air. Unfortunately, even though many users are made to pay something for the water they use, the charges are often below the actual costs incurred in providing the water; in effect users of water are often subsidized. As an example, although water in the western United States is frequently in short supply, it is underpriced as a gesture to farmers who want to use the water for irrigation. Consequently, the use of water in the West is encouraged rather than discouraged. A higher price on the use of water would lead to increased care in its use.

One of the few places in the world where an effort is made to assess appropriate charges for the use and discharge of water is the Ruhr Valley. Here, in Germany's industrial center, a series of regional cooperatives have evolved an elaborate system for monitoring water usage and assessing waste. Despite some imprecision in the way charges are levied for the discharge of dirty water, Ruhr manufacturers and municipalities exercise unusual care in

the use and recycling of water. For instance, it takes only 2.6 cubic yards of water to make a ton of steel in the Ruhr compared to the 130 cubic yards it often takes elsewhere when the water is treated as a free good.³ Unfortunately, because it is even more difficult to measure the use and discharge of air, there has not been comparable progress in the improvement of air quality in the Ruhr.

Extending the practice of charging more realistic prices for natural resources in the United States would not be too difficult. For example, some first efforts toward better water usage have already been made in the Ohio River Valley by ORSANCO.⁴ ORSANCO is composed of governmental agencies in the area. It has attempted to measure how much factories and municipalities along the Ohio and its tributaries have lowered the quality of the water. The polluters are then assessed for the damage they cause. Extending this principle to the use and abuse of other natural resources besides water, we should institute extra charges on the use of coal and oil with a high sulfur content.

Similar charges or taxes should be paid for the use of no-deposit bottles and automobiles. When the bottles or automobiles are finally turned in to the bottler or junkman, the charge will be refunded. In effect, this would be the end of the no-deposit bottle; it would also stimulate recycling and tend to keep bottles and abandoned cars off the streets. Suggestions have also been made that in addition to a regular deposit fee, there should be periodic special prizes for every 10,000th bottle returned. Such a lottery system might succeed in inducing cooperation from those who would not normally be attracted by the relatively small reward of the deposit return itself.

Cities should also charge higher vehicle taxes to discourage the ownership of cars within the city. If, for example, fees were applied to cars that were not garaged, this would constitute a rental charge for the use of city streets. Since the production of automobiles increases each year while the number of city streets remains relatively constant, this makes good sense. Tolls might also be levied

³ Marshall I. Goldman, *Controlling Pollution: The Economics of a Cleaner America* (Englewood Cliffs, N. J.: Prentice-Hall, 1967), p. 36.

⁴ Edward J. Cleary, *The ORSANCO Story* (Baltimore: Johns Hopkins Press, 1967).

on cars that enter the city and, in an extreme case, the toll might be set so that the fewer the passengers, the higher the toll. This would encourage car pooling or public transit and thereby reduce the number of cars that stream into the city each day.

Higher charges for such resources would limit the use of these resources, and these user fees could be used by the government to improve the quality of the environment. For example, better water treatment plants and improved public transportation might be financed this way. Furthermore, subsidies could be extended to junkmen to encourage them to collect paper, rags and metals which could then be recycled in the production process. This once was common procedure. As the costs of labor have risen, however, such activities have become unprofitable. With subsidies, it may be that the junkman will be able to ride again.

HOW MUCH WILL ALL OF THIS COST?

An estimate of the cost of eliminating environmental disruption is not easy to make. Various estimates are tossed around, but generally they are not based on solid research or calculation. Moreover, once a figure is suggested by someone, it is often grabbed by everyone else until gradually it is accepted as a basic truth. In time, the original source and the qualifications surrounding the calculation are forgotten and only the basic figure remains.

The absence of reliable data is due to several factors. First, there is confusion between the costs required to construct an adequate treatment system and the costs of operating that system. Often the figures are used without making any distinction between them. Second, usually it is not clear just what the

⁵ Federal Water Pollution Control Administration, U.S. Department of the Interior, *The Cost of Clean Water*, Summary Report, Volume I (Washington, D. C.: U.S. Government Printing Office, January 10, 1968), pp. 3-4.

⁶ A system of holding tanks for the temporary storage of storm water overflows might obviate the need to construct separate sewers. This would cost a mere \$15 billion. (See *ibid.*, also *The New York Times*, February 25, 1970, p. 59; *Fortune*, February, 1970, p. 195.)

⁷ *The New York Times*, March 17, 1970, p. 29.

elimination of ED would mean. Thus when speaking of water treatment, is the goal secondary or the more elaborate tertiary treatment? The cost of tertiary treatment is often two and a half times that of secondary treatment. Moreover, we are a long way from reaching the goal of secondary treatment in the United States. Currently the homes of 70 per cent of our population are served by some kind of sewer system. However, the sewage from about 7 per cent of these homes (involving 10 million people) is discharged directly into our water courses as raw sewage (primary treatment). Only about 43 per cent of the American population (about 85 million people) are served by secondary sewage systems.

For many people living in isolated areas, there is no need for secondary treatment or even for sewers. A septic tank or even an outhouse may more than adequately treat such waste if the site is isolated enough. (In effect, this is nature's way.) As people continue to crowd into urban areas, however, the need for sewers and secondary treatment grows. The Federal Water Pollution Control Agency estimates that by 1973, 90 per cent of our urban population will need secondary sewage systems. To bring us up to that level will require over \$8 billion in water treatment plants (exclusive of land costs) and over \$6 billion in sewers.⁵ Secondary treatment of industrial wastes will require close to another \$5 billion in construction. To separate storm and household sewers could cost anywhere from \$10 billion to \$48 billion⁶ and to control thermal pollution will cost yet another \$2 billion. The Federal Water Pollution Control Administration estimates that the annual operating costs for all these facilities would reach almost \$2 billion for the municipal plants, \$3.5 billion for the industrial plants, and about \$1 billion for the thermal processes.

If we were forced to move to tertiary treatment, the total for all construction costs in Table I would probably jump from \$31 billion to about \$90 billion. This helps to explain why some authorities estimate the ultimate cost to be close to \$100 billion.⁷

TABLE I: THE COSTS OF AIR, WATER AND SOLID POLLUTION CONTROL
(in billions of dollars)

| | <i>Construction Costs</i> | <i>Annual Operating Costs</i> |
|--|---------------------------|-------------------------------|
| A. Water Treatment Costs (Secondary Treatment) | | |
| 1. Household sewage | | |
| A. Treatment Plants | \$8 | |
| B. Sewers | \$6 | |
| | <u>\$14</u> | |
| 2. Industry treatment costs | \$5 | \$2 |
| 3. Thermal Pollution | \$2 | \$1 |
| 4. Sewer separation | \$10-\$58 | |
| Total Secondary Treatment | <u>\$31-\$79</u> | <u>\$6.5</u> |
| Tertiary Treatment | \$90-\$100 | |
| B. Air Pollution | | |
| 1. stationary sources | \$100 | \$3-\$3 |
| 2. automobile pollution | | \$2-\$3 |
| C. Solid Waste | | \$3-\$4.5 |
| Total Pollution Control (Secondary Water Treatment only) | <u>\$130-\$180</u> | <u>\$12-\$17</u> |

Sources: See text.

It is necessary to emphasize that such estimates are imprecise. Even if it is assumed that we know what standards we want to attain, it is still hard to project meaningful figures. Treatment technology is as yet relatively primitive. Technological breakthroughs could reduce costs significantly.⁸ Moreover, the estimates will be affected by what happens to population growth and concentration. If population increases, so will costs. It will also depend on what new industrial processes complicate existing treatment methods. Care must also be exercised in judging cost estimates because there is a tendency to overestimate costs to discourage pressure for change and also to win admiration for the expenditures already made. This is understandable, since almost everyone agrees that pollution control expenditures usually add nothing to profits. On the contrary, they result in diminished profits for industry (except for the producers of pollu-

tion control equipment) and in higher taxes.

Finally, it is difficult to determine how much man must do to clean up his water and air. Up to a certain point, water courses and air sheds have a natural self-cleaning power. This regenerative process has served admirably for the last several thousand years. It breaks down, however, when a threshold is passed and the amount of newly added dirty water and air suddenly overtaxes nature's cleansing capacity. The question that arises is how much should we expect nature to do on its own and how much should we require man to spend to facilitate the process? In some cases, man's help is a necessity; in other cases it is unnecessary. Deciding where nature's work ends and man's work begins is not easy.

It is also very difficult to say who should pay for the cleanup job once it is decided that man should pay. Should it be all the men who have put straw on the camel's back or just the last man who breaks its back?⁹

Estimates of eliminating air pollution are even more complicated. Projected construction costs for new treatment equipment range

⁸ *Wall Street Journal*, March 19, 1970, p. 14.

⁹ Allan V. Kneese, *The Economics of Regional Water Quality Management* (Baltimore: The Johns Hopkins Press, 1964), pp. 46, 62.

from \$300 million a year to \$3 billion.¹⁰ According to the maximum forecast, that would mean capital expenditures of slightly less than \$100 billion by the year 2000. But these cost figures only cover emissions from stationary sources. Currently, the greatest source of air pollution in many cities is the automobile. A variety of solutions for reducing emissions from the internal combustion engine have been suggested. They include everything from outlawing the combustion engine itself to eliminating gasoline with lead. The cost of the cure varies with the severity of the remedy. There seems to be some agreement (this may merely be a sign that everyone is repeating the original estimate) that proper control equipment and the elimination of leaded gasoline would result in a 10 per cent yearly increase in the cost of operating an automobile. The cost per car would be about \$30 per year based on the average per capita expenditure of \$300 a year that Americans spend on their automobiles.¹¹ For the country as a whole, the total annual outlay could range from \$2 billion to \$3 billion.

Another cause of air pollution is the jet airplane. Generally airlines claim that they contribute only 1 per cent of the nation's air pollution. However, the amount of jet pollution varies from city to city and neighborhood to neighborhood, depending on proximity to the airport.¹² New York City reportedly receives one and a half tons of air pollutants a day. As a result of new laws instituted by officials in New Jersey and Chicago, which now allow state officials to exact fines as high as \$5,000 for planes which violate exhaust

standards, the airlines have agreed to curb their exhaust emission by 1972. Initially airline officials claimed this would cost \$30 million. Subsequently they lowered their estimates to \$13-\$15 million.

Although it is not indicated in Table I, it is necessary to remember that some of the cost incurred in reducing water and air emission will be offset by savings that come with cleaner water and air. For example, one saving will result from increased utilization of the by-products of combustion. This will permit greater recycling of nature's resources and will mean less exploitation of new resources. It is estimated that approximately 23 million tons of sulfur dioxide are discarded into the air each year as part of the combustion process.¹³ If recovered, this could provide about 5 million tons of sulfur or 15 million tons of sulfuric acid. Although the price of sulfur has fallen in recent years so that recovery is less attractive than it once was, such a program of resource reuse would virtually satisfy the entire demand for some sulfur compounds.

A more important saving that would result from better air would be the reduction in cleaning bills and medical expenses. Again, estimates of the potential saving are hard to substantiate. The usual figure that is reported as the cost of air pollution is \$11 billion.¹⁴ This, it turns out, is derived from a study that was made in Pittsburgh in 1913. Recently, the National Air Pollution Control Administration has published estimates of costs that range from \$14 billion to \$18 billion.¹⁵

Institution of \$100-billion worth of air quality controls would not mean the elimination of all air pollution nor of the costs that arise from it. Nevertheless, substantial savings could be realized and therefore used to defray the cost of the annual expenses envisaged as necessary to clean up the air. This could go a long way if not all the way toward offsetting the annual \$2.5 billion to \$6 billion in operating expenses that would be needed to curb air pollution as indicated in Table I.

The cost estimates for solid waste dis-

¹⁰ Committee on Public Works, United States Senate, *On Pollution*, 1967. (Air Quality Act) S. 780, Part 3 (Washington, D.C.: U.S. Government Printing Office), p. 1361; *Fortune*, February, 1970, p. 123; James J. Hanks and Harold D. Kube, "Industry Action to Combat Pollution," *Harvard Business Review*, September-October, 1966, p. 57; The Working Committee on Economic Incentives (Revised), *Cost Sharing With Industry?* (Washington, D. C.: Room 325, Executive Office Building, November 20, 1967), p. 21.

¹¹ Resources for the Future, Inc. *Resources*, Number 33, January, 1970, p. 8.

¹² *The New York Times*, January 21, 1970, p. 26.

¹³ Hanks and Kube, *op. cit.*, p. 54.

¹⁴ *Fortune*, February, 1970, p. 122.

¹⁵ *Ibid.*, p. 130.

posal are somewhat less complicated but still something less than precise. They are less complicated because in the present state of the art, the technology is even more primitive than it is in water and air treatment. Usually solid waste disposal involves nothing more than an incinerator and often just an empty field and a fleet of dump trucks. Sophistication may mean nothing more than an automobile shredder which may cost \$3 million. Under the circumstances, the capital expenditures required for solid waste disposal are negligible compared to the investment required for air and water treatment. Thus to dispose of the estimated 5 pounds a day in household waste discarded by an average American, the major costs are collection, transportation and disposal. It is estimated this amounts to from \$3 billion to \$4.5 billion a year.¹⁶

WHO IS TO PAY HOW MUCH?

Remembering the roughness and the random nature of these various cost estimates, we come to the next question: who should pay for these costs and how will such expenditures affect economic growth? If the data we have to work with are rather weak, any analysis based on this foundation will be open to similar criticism. Nonetheless we can still make some substantive observations.

Based on the estimates developed in this paper, construction costs for the improvement of ED could cost anywhere from \$130 billion to as much as \$180 billion. Annual operating costs should range from \$12 billion to \$17 billion. These operating costs amount to approximately 1 per cent to 2 per cent of the annual gross national product (G.N.P.) and 4 per cent to 7 per cent of the value of our industrial, agricultural, mining and transportation output. This is not too far out of line with the experience of individual firms that shows that they sometimes allocate as much as 10 per cent of their expenditures to pollution control.¹⁷

When the market situation is competitive,

the bulk of the costs will fall on the producers themselves. Their profits will drop and this in turn should eventually discourage the flow of new capital and the expansion of productive capacity. To the extent that this results in a fall in output or the closing of some businesses, prices of the affected goods should rise, transferring at least part of the cost to the consumer.

In industries and activities where there is less competition or where the demand curve is inelastic, the cost will be transferred directly to the consumer. Conceivably, this will lead to a search for product alternatives. This will not be easy since we assumed initially that the demand for the original product was inelastic, which means there are no readily apparent substitutes. But if the costs of these inelastic goods rise and the quantity of the goods purchased remains much the same, the disposable income available for the purchase of other goods will be reduced.

Whether the producer bears the cost of pollution control or passes them on, the ultimate result is that the prices of goods to the consumer will rise. Unless total personal incomes increase, this will lead to a fall in real personal consumption. In effect, it will be as if a new sales tax were imposed on all consumption. Just like war expenditures or new highway construction, such funds will go for a type of nonconsumption good—pollution control.

Like any sales tax, this will probably mean a proportional fall in actual personal consumption for all income groups. But since lower income groups spend a larger proportion of their incomes on goods than upper income groups, a program of pollution control will probably be reflected primarily in higher prices on consumer goods and this will fall disproportionately on lower income groups.

(Continued on page 110)

Marshall I. Goldman is an Associate of the Russian Research Center, Harvard University. He is the editor of *Controlling Pollution: The Economics of a Cleaner America* (Englewood Cliffs, N.J.: Prentice-Hall, 1967).

¹⁶ *The New York Times*, March 27, 1970, p. 28.

¹⁷ This 10 per cent often refers to construction costs. Again, estimates may vary.

"The government can act in a positive way to stop pollution, but there is no doubt that it will have to envisage penalties for those who fail to do their share."

The Federal Government and the Environment

By GEORGE S. McGOVERN
United States Senate

POLLUTION OF OUR environment is increasing alarmingly. It is already so extensive that the federal government must play a major role in confronting this national problem. The government can act in a positive way to stop pollution, but there is no doubt that it will have to envisage penalties for those who fail to do their share.

The problem the nation faces is almost overwhelming. Among the major areas for action are clean water, clean air and solid waste disposal.

Water is essential for life, but by the end of the century it may be in short supply. We will not be able to waste it; water will have to be reused many times. Yet we continue to dispose of waste in our rivers and lakes, and even pesticides, which are essential to farming, eventually seep into the water.

More than 142 million tons of pollutants are released into the air over the United States every year—three-quarters of a ton for every man, woman and child. Virtually all air pollution results from some kind of combustion or burning—gasoline in automobile engines, coal, oil or other fuels in industrial plants, generators and heating plants, or the incineration of garbage or other refuse.

Solid waste is piling up as we use more disposable containers. It is increasing by more than 4 per cent annually; every day United States municipal and private collection ser-

vices pick up the equivalent of more than five pounds of trash and garbage for every American.

A POSITIVE LEGISLATIVE FRAMEWORK

Congress has created a positive legislative framework for improving our environment. Among the most important laws adopted in recent years are: The Water Resources Act of 1964, the Water Resources Planning Act of 1965, the Highway Beautification Act of 1965, the Clean Air Act of 1965, the Air Quality Act of 1967, the Clean Water Restoration Act of 1966, the Solid Wastes Act of 1965 and the National Environmental Policy Act of 1969.

Now life must be breathed into the law by the appropriation of adequate funds. Governments, at all levels, will have to spend as much as \$150 billion in the next 15 to 20 years to clean up pollution. Industry will have to spend the same amount. But in the 1969 fiscal year, the federal government is spending only \$3.7 billion or only 1.8 per cent of the total budget on the environment.

The administration has now proposed a program to improve the nation's environment. Uniform standards would be set for water purity and municipalities would be encouraged by \$4 billion in federal grants to build sewage treatment plants. Research would be conducted on a "virtually pollution-free"

car. Cash incentives would be paid for hauling old cars to junk yards. An effort would be made to open new recreation areas.

While this is a useful program, it must be linked with a far greater program for stopping pollution. If adequate financing is forthcoming, each problem can be brought under strong attack.

STIFFER PENALTIES REQUIRED

The federal government could encourage local governments to stop disposal of human and industrial wastes in the water. Safeguards would be ready for policing the water once it is clean and for preventing new industrial and housing developments from becoming polluters. Good soil conservation techniques would help stop run-off of water containing pesticides. But this positive program, which is within our reach, must be accompanied by stiffer penalties against industrial and municipal discharge into lakes and rivers. Both federal and state agencies will have to be prepared to levy stiff penalties if necessary. Fines of up to \$10,000 a day would be authorized by the administration's proposal.

Congress has adopted a program aimed at establishing five-year air quality improvement programs in 57 "air quality control regions." The setting of federal standards would provide a basis for stronger enforcement of clean air rules; penalties could go as high as \$10,000 a day.

Naturally, we must ensure that solid wastes do not become an increasing blight. But even if this form of pollution is kept within bounds, we still will face the problem of disposing of it. Over \$800 million has already been appropriated for research and action on waste disposal. Now increased attention should be given to reusing solid wastes. More than \$1 billion worth of metal can be salvaged each year. Recycled waste paper can help preserve our forests from accelerated depletion.

In all of these fields, the actions of the federal government can and should be positive. It should be able to devise and implement effective programs to stop the progressive de-

spoilment of the environment and then to improve substantially the air, land and water.

But recent events, such as the disastrous oil spills on our shores, show that the federal government must also be armed with effective punitive weapons. While positive action will, we hope, eventually bring an end to pollution, polluters will, in the meantime, have to be discouraged from continued practices. The economic cost of polluting can be made as high as the profit accrued from pursuing policies which show little regard for the preservation of the environment. Economic penalties can serve this purpose, although they are far less desirable than voluntary, constructive action by government and industry.

Government and industry cannot end pollution themselves. Each individual has an obligation to himself and his neighbors to work toward the improvement of the environment. The federal government can help individuals to do their job.

Senator Philip Hart (D., Mich.) and I have proposed the Environmental Protection Act of 1970 which would serve just this purpose.¹ It would provide that:

The Congress finds and declares that each person is entitled by right to the protection, preservation, and enhancement of the air, water, land, and public trust of the United States and that each person has the responsibility to contribute to the enhancement thereof. . . .

The act would authorize any person to bring suit in federal court against any person or organization which is causing pollution. The court would be empowered to order action to be taken that would end the offending pollution, once the plaintiff proved his case.

(Continued on page 110)

George S. McGovern was a professor of history and political science at Dakota Wesleyan University from 1949 to 1953. He was a member of the 85th and 86th Congresses, Director of the Food for Peace program in 1961-1962 and was elected U.S. Senator from South Dakota in 1963. His most recent book is *Time of War, Time of Peace* (New York: Random House, 1968).

¹ For the text of this bill, see *Current History*, July, 1970, pp. 48ff.

Federal Penalties for Polluters*

Most existing federal legislation, designed to mete out penalties to those persons or agencies who destroy or pollute the national environment, has involved water pollution.

Recent interpretations of the River and Harbor Act of 1899 and the Refuse Act of 1899 indicate that they may be used to punish and prevent water pollution.

RIVERS AND HARBORS ACT, 1899

The United States Army Corps of Engineers can block applications for a permit "to fill, dredge, discharge or deposit materials, or conduct other activities affecting navigable water," when the proposed work would cause damage to the environment, rather broadly defined.

REFUSE ACT, 1899

The Refuse Act gives the Corps of Engineers the power to levy penalties on those who discharge refuse into navigable waters or deposit polluting materials on their banks. Violations of the act are subject to criminal prosecution and penalties of fine not exceeding \$2,500 nor less than \$500 or imprisonment for not less than 30 days nor more than one year, or both. Rewards can be paid to citizens who provide information on alleged violations.

WATER QUALITY ACT, 1965

Under the Water Quality Act of 1965, water quality standards have been established for all states. Once approved by the Secretary of the Interior, these standards become the basis for federal enforcement. The Attorney General of the United States can bring a pollution abatement suit against violators of the standards for interstate water. In the past 12 years, 46 such actions have

been taken. The enforcement process includes three stages: an enforcement conference, public hearings before a hearing board, and court action. There has been only one court action, and few cases proceed beyond the conference stage.

In general, pressure has been brought to bear through public opinion rather than through the courts, but recent developments relating to the pollution of Lake Erie indicate that a new policy may be pursued.

The administration has proposed that companies and cities which pollute the water should be subject to fines of up to \$10,000 a day.

CLEAN AIR ACT, 1965

The federal program for combating air pollution began several years after the efforts to improve the water. The Clean Air Act of 1965 provided for federal regulation of motor vehicle emissions. Exhaust standards were issued in 1968 and provide the only grounds, at present, for federal enforcement action in the field of air pollution control.

The administration has proposed penalties of up to \$10,000 a day for polluters who would violate a suggested federal standard for air pollution.

Until now, the federal program relating to solid wastes has not included provisions for penalties. This position results, in part, from the recognition that solid wastes, unlike air and water pollutants, do not travel across state lines as a result of natural processes.

Wherever standards have been laid down by federal law, the government may bring suit in the federal courts against alleged offenders. Such action may extend beyond cases where pollution is the sole or principal factor involved.

*Editor's note: Reflecting the national interest in the environment, scores of bills providing penalties for polluters have been prepared for the 91st Congress.

“... We find the federal government . . . controlling hour-to-hour details in carrying out individual local programs, we find responsibility for dealing with certain urban problems thrust upon states which have neither experience nor interest in urban affairs . . . and we find individual cities struggling vainly to make their own complicated financing structures squeeze out a few more dollars for urgently needed improvement programs because assistance is not available from any other level of government.”

Liveable Cities

BY DONALD G. ALEXANDER
Legislative Counsel, National League of Cities

THE DECADE OF THE 1970's is certain to be a watershed in the development of America's cities. Programs to improve cities, which were pursued with vigor in the 1950's and 1960's, must be vastly expanded in the 1970's to preserve our cities as places of enjoyment for the great majority of Americans who will be living or working in them by 1980.

The expansion process will take place through an institutional structure involving many decisions by governments, private businesses and agencies and individual citizens. All their decisions will affect the nature of the urban environment, and because of the complicated interrelationships among them, no single sector—government, business or individual citizen—will be able to achieve a development process and results entirely in accord with its desires.

Within this structure, one of the most significant influences in upgrading urban life will be public decision-making in such areas as land-use planning, transportation system development and the construction of public facilities. The President's Committee on Urban Housing has estimated that to house our population satisfactorily, a national goal

of 26 million new and rehabilitated housing units, including at least 6 million subsidized units for low-income families, will be required by 1978.¹ To achieve this, we must double our current annual housing production rate of 1.4 million units. The construction rate has slowed in 1970 because of a severely restricted money supply and the high costs of inflation. Similar increased efforts must be made to provide improved public facilities —schools, parks, water supplies, sewers—which are vital but often forgotten elements in neighborhood development programs.

Numbers alone, however, tell little of the future direction of urban development. Without proper planning, these 26 million new units and their supporting facilities could be produced in a manner resembling the dull and now decaying developments which sprang up in the years following World War II. For planning to be effective it must have credibility and for planning to have credibility sufficient public and private resources must be available to carry out the plans. Today, there is a huge gap between the needs identified in local plans and the resources available to fill these needs. For urban renewal alone, nearly \$3 billion worth of projects in excess of available resources are ready to be started when funding is provided. In water pollution control, over \$2 billion in

¹ "A Decent Home," *Report of the President's Committee on Urban Housing* (Washington, D.C.: U.S. Government Printing Office, 1969), p. 3.

local projects have been planned and are awaiting funds.

The total cost required to improve the liveability of cities will be enormous, certainly approaching \$1 trillion; and such a budget requires a firm commitment of public and private resources. This commitment is lacking today. In the area of housing, for example, the Housing and Urban Development Act of 1968 set a goal of 26 million new housing units by 1978, yet to date neither Congress nor the administration has backed an appropriation of sufficient funds to develop publicly supported housing at the rate necessary to meet the goal of 6 million subsidized units by 1978.

IN-MIGRATION

Local officials recognize the urgency with which massive improvement programs must be initiated to maintain and improve urban living. But although they have the responsibility and are expected to deal with the immediate crisis, city officials have startlingly little control over the conditions that create the most severe urban problems. City officials are not responsible for the economic, social and cultural poverty of rural America, particularly in the South, which has led to the great in-migration of the poor and unskilled to the central cities. People come to the cities with the full knowledge that the streets are not paved with gold—but they come, for in the cities there is still hope. A detailed examination of migration problems in *Fortune* magazine noted:

² "The Southern Roots of Urban Crises," *Fortune*, August, 1968, p. 80.

³ A panel of urban financing experts convened by the National League of Cities and other groups concluded:

"Central cities should not kid themselves that the state or federal governments or the suburbs can or will come through with enough aid and relief to close the whole gap between local spending at the present rate of increase and local revenue from today's local tax practice.

"At today's growth rates of city spending vs. city tax revenue plus state and federal aid, the urban deficit for the next 10 years is estimated by the National League of Cities at \$262 billion plus." "Financing Our Urban Needs," *Nation's Cities* (Washington, D.C.: The National League of Cities, March, 1969), p. 19.

Most of the migrants know that what awaits them in the urban North is little better than a rattlesnake's hole . . . [but despite the bleak prospects] most often, the migrant heads North, where there is at least a chance of a job, no men in hoods ride the streets, and there is a welfare payment to keep the migrant alive.²

Though the influences come from the outside, it falls to city officials to deal with the problems which such in-migration creates. City officials often lack access to the resources necessary to cope with problems of such magnitude. Local revenue-raising capability and, to some extent, local spending choices are severely constricted by state law:

States tell cities what taxes they may raise, and in some cases how high they may raise them.

States designate who may and who may not be taxed.

States set limits on how much debt may be incurred and what interest rates may be paid, and

States sometimes mandate services which must be performed and dictate what people must be paid to perform them.

From this constricted local revenue base, demands for the full variety of municipal services must be met, and demands for increased commitments from local resources have never been greater.

The only significant revenue source which most cities are free to manipulate to gain greater revenue on their own is the property tax but, because of the high property taxes already imposed in many cities, further increases tend to discourage physical improvements and to drive out both industry and individuals able to pay, thus aggravating the very problems the city is seeking to solve. Outside help in the form of grants-in-aid or assignment of greater authority to cities to raise their own revenue through local sales or income taxes will be needed before any major improvement programs can be undertaken.³

Despite nationwide recognition of the urban crises, other levels of government have been slow to provide direct assistance or to loosen the legal straitjacket in which city officials must act to control problems or develop solutions.

State governments have been particularly

derelict in this regard. William G. Colman, until recently the executive director of the prestigious Advisory Commission on Intergovernmental Relations, has observed, "As the road to the present urban hell was paved, many major sins of omission and commission can be ascribed to the States."⁴ Nor does it appear that most states, even in 1970, are yet ready to reorient themselves to lend city officials a hand in combating the urban crisis. The impact of the crime problem is particularly concentrated in the urban areas, and the urgent needs of cities for assistance in controlling crime are great and obvious. Yet a 1970 study of state-controlled allocation of federal crime funds under the Omnibus Crime Control and Safe Streets Act of 1968, concluded with dismay:

The states, in distributing funds entrusted to them under the block grant formula of the Safe Streets Act, have failed to focus these vital resources on the most crucial urban crime problems. Instead, funds are being dissipated broadly across the states in many grants too small to have any significant impact to improve the criminal justice system and are being used in disproportionate amounts to support marginal improvements in low crime areas.⁵

The response of the federal government to the problems of urban areas has improved markedly in recent years. Federal aid outlays in urban areas grew from \$3.9 billion in 1961 to \$14 billion in 1969, though actual direct grants to cities were much lower than this. A much larger commitment of federal assistance is needed, and a restructuring of systems and resource allocation practices is a prerequisite to solving urban problems, if the dollars committed to such efforts are to be used effectively.

GOVERNMENTAL ROLES

An important element of this restructuring must be a clearer definition of the roles of

⁴ William G. Colman, "Making Our Federal System Work: A Challenge for the 70's," *The Urban Lawyer* (Chicago, Illinois: American Bar Association, Fall, 1969), p. 304.

⁵ "Street Crime and the Safe Streets Act: What Is The Impact," A Special Research Report by the National League of Cities and the U.S. Conference of Mayors (Washington, D.C., February, 1970), p. 28.

the federal, state and local governments in urban problem solving. Currently, governmental roles in urban programs tend to be what the individual governmental units choose to make them or must make of them out of necessity.

Thus, today we find the federal government in Washington controlling particular hour-to-hour details in carrying out individual local programs; we find responsibility for dealing with certain urban problems thrust upon states which have neither experience nor interest in urban affairs but seek only to increase their political power through control of funds; and we find individual cities struggling valiantly to make their own complicated financing structures squeeze out a few more dollars for urgently needed improvement programs because assistance is not available from any other level of government. For a truly coordinated and efficient system backing the national effort, responsibilities must be more rationally related to interest, experience and resource-collecting capacity.

In this effort, city governments have a major role to play. Cities are the level of government closest to the people, and it is city government to which the people turn first when they have problems, regardless of the control which the city can exercise over the solutions. Mayors and other locally elected officials will be most responsive to the needs and problems of the community, for their jobs depend on continued progress towards satisfying local needs in a manner acceptable to their electorate. Thus, in any rational urban improvement system major responsibility for planning urban improvements and the day-to-day operation of local programs should be assigned to city governments.

States also have a significant role to play in support and oversight of urban improvement efforts. Overall goals must be set at the state level in key areas which have application beyond individual jurisdictional boundaries such as education, highway system development, water resources and land-use planning. Development of individual

local programs can be coordinated with these state goals which set general direction and assure that local efforts do not work at cross purposes. State planning structures which are established must, however, reflect local determinations of need. To govern urban living, states can impose and enforce laws and regulations which individual cities could not set because of the potential confusion of varying regulations and the difficulties of local enforcement. In addition, states can provide facilities and technical assistance which many localities could not develop on their own. Such facilities and services might include state-wide crime laboratories, the higher educational systems, training for municipal personnel and counsel in the planning and development of local improvement efforts.

Great economies and efficiencies in revenue collection and distribution can also be achieved at the state level. Income and sales taxes have great potential as revenue sources which can be cultivated without an adverse impact on urban development. These can be effectively collected at the state level and redistributed to local governments by means of revenue-sharing formulas. Such formulas must make an adequate share of funds available to urban areas, reversing the traditional state pattern of favoritism to non-urban areas. If such a reversal of patterns can be achieved and an adequate share of funds can be made available to urban areas, the adverse impact on local development currently resulting from the heavy burdens necessarily imposed by local property taxes may be eased.

The federal government can make three vital contributions to improve urban areas. First of all, it can distribute resources to state and local governments for urban improvement programs. The federal income tax is certainly the most efficient revenue collection device and currently appears to be the fairest. Because of the overbearing influence it exercises on the national economy and the heavy burden it imposes on individual and corporate incomes, state and local governments find it difficult to establish comparably efficient and fair revenue structures.

Federal assistance for urban programs from this revenue source is currently provided through categorical grants-in-aid aimed at individual improvement projects. The present aid programs have been valuable in providing necessary support for local efforts, though they have not realized their full potential because the funds appropriated for them are meager. Categorical grants also have several drawbacks. The administrative costs of such programs are very high in relation to payoff. Grant applications sometimes resemble the Manhattan Telephone Directory; scores of federal-level checkoff points can delay approval of grants so that local programs depending upon them are severely hindered; and, once grants are approved, oversight functions sometimes severely limit local flexibility to deal with particular local conditions and add further administrative costs which divert funds. In addition, such grants make a coordinated local improvement effort supported by federal assistance extremely difficult because of uncertainty as to when funds will be available, and because the wide variety of cost-matching ratios and compliance requirements are difficult to integrate into one comprehensive urban improvement package. In addition, categorical grant programs seldom provide assistance for operation and maintenance.

To avoid these problems, to encourage comprehensive local development programs supported by federal assistance, and to make effective use of federal aid in action programs without heavy administrative costs, the National League of Cities and the U.S. Conference of Mayors are urging adoption of a revenue-sharing plan that would allow an automatic distribution of a set percentage of federal income tax receipts to cities for unrestricted use. Such a plan would greatly improve the positive role of the federal government in providing assistance for local improvement programs.

A NATIONAL URBANIZATION POLICY

The second major contribution which the federal government can make toward speed-

ing the progress of urban improvement is the development and implementation of a national urbanization policy. This policy would set the goal of improvement of urban life as a priority concern of the federal government and would coordinate federal programs toward that common objective. At present, federal programs often work at cross purposes, some stimulating improvement in urban areas and others frustrating these efforts. For example, while the Department of Housing and Urban Development works to establish stability and to improve home ownership in underprivileged neighborhoods, federal tax laws stimulate rapid turnover of property with a resulting instability in the neighborhood structure, and the home mortgage insurance protection of the Federal Housing Administration strongly encourages the flight to the suburbs. While major federal efforts are undertaken to feed hungry people in both urban and rural areas, the Department of Agriculture spends \$4 billion a year to subsidize farmers not to grow food to keep prices high, thus limiting the availability of food to the poor. A national urbanization policy would avoid such incongruities, providing the direction which all federal programs would follow.

The third major contribution which the federal government can make is the effective use of federal laws and regulatory powers when local or state action alone would be inadequate to protect and improve the quality of urban life. While it is impossible in this article to discuss the many federal laws affecting urban life, two areas can be noted where more effective federal controls are urgently needed. The first is in the area of pollution abatement. Cities, and even states, have a difficult time developing and enforcing pollution regulations because of the interstate nature of much of the activity creating the pollution and the national nature of problems such as oil spills, auto ex-

hausts or disposable packaging. These can be controlled only by strong regulations at the national level.

The second area is organized crime and the derivative problem of drug abuse. It is estimated that as much as \$30 billion passes through the hands of the crime syndicate each year. Most of this money comes from urban areas. Further, it is estimated that up to 50 per cent of the street crime in some cities is committed to support drug habits and other organized-crime-related activities. The heavy costs and high crime rates spawned by organized crime have an obvious degrading effect upon the quality of urban life. Because the problem is interstate and even international in nature, federal action is required.

NATIONAL PRIORITIES

Changes in federal, state and local systems to improve program operations and coordination and to provide greater focus for urban problems alone will not be sufficient. A major reordering of national priorities is also required to provide the resources necessary for programs of physical development and social improvement which can provide a healthier urban environment.

At present, Americans invest approximately \$25 billion annually in housing construction and rehabilitation. To reach the goal of 26 million new and rehabilitated housing units set by the President's Committee on Urban Housing, an investment of \$500 billion to \$600 billion, about 5 per cent of the annual Gross National Product, will be required.

The United States Department of Interior has estimated that public expenditures ranging from \$45 billion to \$65 billion and additional private outlays of up to \$6.5 billion are required for construction of facilities to control water pollution in the first part of the 1970's.⁶ The present annual rate of public investment is less than \$2 billion. A doubling and perhaps tripling of this is required.

Secretary of Transportation John A. Volpe has noted studies which set the necessary capital investment for public transportation system improvements as high as \$30 billion in

⁶ "The Cost of Clean Water and its Economic Impact," U.S. Department of Interior, Federal Water Pollution Control Administration (Washington, D.C.: U.S. Government Printing Office, 1969.)

the next decade.⁷ This rate is certain to be exceeded if use of the automobile in central city areas is substantially curtailed. Further, the growing trend toward government subsidy of part or all of the costs of operating public transportation indicates that a greater cost burden must be born by the taxpayers, in addition to the necessarily substantial share of the projected \$30 billion capital investment.

These are the projected costs in a few programs to provide improvements in the physical environment of cities. But there are many more areas of need—schools, hospitals, airports, highways, parks, offices and stores. Exact cost estimates projected ten years ahead are nearly meaningless and the strong likelihood exists that new technology and new lifestyles will radically change many of the projected needs before the end of the decade. Still it can still be stated with some assurance that an investment of at least \$1 trillion during the next decade will be necessary to provide the physical facilities for liveable cities.

Great care will have to be taken to make sure that this huge capital investment is spent effectively. Many of the major capital investments of the 1950's and 1960's only aggravated the problems they were designed to solve. Urban highways built to end traffic problems often created additional congestion and pollution. Public housing projects built to replace slums have often become huge vertical slums into which even the police fear to venture. In his book, *Urban Dynamics*, Jay Forrester argues persuasively that public housing and other subsidy programs designed to help the poor and end poverty may have really increased poverty and despair in the central cities by creating greater concentrations of poor and unskilled than can be served by subsidy programs, at the same time raising municipal costs and undercutting the local

economic base, thus further aggravating poverty conditions. Forrester observes:

The pervasive sense of failure and frustration among men concerned with management of urban affairs points to the likelihood that inherent behavior of complex systems defies the intuitively "obvious" solutions of the past. Among political leaders, managers of redevelopment activity, and political scientists interviewed in connection with this study, there was the overwhelming opinion that the problems of the urban areas remain severe in spite of the variety of programs that have been tried over the last three decades.

Contributing to the selection of ineffective programs is the nature of the conflict between short-term and long-term considerations in complex systems. Very often the actions that seem easiest and most promising in the immediate future can produce even greater problems at a later time. Humanitarian impulses coupled with the short-term political pressures lead to programs whose benefits, if any, evaporate quickly, leaving behind a system that is unimproved or in worse condition. Job-training programs, low-cost housing programs, and even financial aid, when used alone without improvements in the economic climate of a city, can fall into this same category of short-term promise followed by detrimental long-term change.⁸

SIMPLISTIC "SOLUTIONS"

New programs to improve urban life will be complicated, involving long months of often frustrating planning to make sure that all variables are considered. Simplistic solutions should be avoided. One simple "solution" currently in vogue must be viewed with particular care. It states that the key to the urban crisis is density and congestion and suggests that to solve urban problems, people,

(Continued on page 111)

Donald G. Alexander is legislative counsel for the National League of Cities and the U.S. Conference of Mayors. He has been deeply involved in development of federal grant-in-aid legislation and has directed and written several follow-up studies on the effectiveness of specific legislation relating to city problems. He has also written magazine articles on urban problems and prepared many statements on urban problems which have been presented to congressional committees.

⁷ Statement of John A. Volpe, Secretary, U.S. Department of Transportation, before the Senate Committee on Banking and Currency, October 14, 1969.

⁸ Jay W. Forrester, *Urban Dynamics* (Cambridge, Massachusetts: The M.I.T. Press, 1969), p. 10.

"There was a mixture of motives and purposes behind . . . earlier large-scale public land reservations. They included concern for nature, for wilderness, for preservation of some of the frontier and related resources in the public interest. Conflicts of interest were inevitable and they still continue."

Wilderness and Forests Tomorrow

BY KENNETH P. DAVIS

Professor of Forest Land Use, School of Forestry, Yale University

TO BEGIN WITH, one must recognize that the idea of a wilderness is a matter of social and human attitudes, and is not a consistently definable concept. One cannot say, "this is a wilderness," and find general agreement. The definition of a wilderness varies with the cultural background, education and desires of the individual.

The origin of the word "wilderness" is shrouded in antiquity. "Wildren" is Middle English for savage, from the old English "wilddéoren," of or like wild animals. Etymologically, the word means the place of wild beasts (or just animals). Consequently, it means a place where nature is largely uncontrolled by man and where natural (another hard word to define) processes prevail.

The Bible contains many references to "wilderness," although the particular meaning is often uncertain because of translation problems. In general, the biblical reference meant a place apart, arid and uncultivated—a wasteland. This meaning is consonant with much of the area on which Biblical experience is based. A wilderness area today can be large or small, and highly variable as to what grows or lives on it. In the United States, wilderness is usually, but not necessarily, associated with forested lands, with which this country is plentifully endowed.

The concept of a forest conjures up many things: a feeling of time and of things endur-

ing; of great trees, some of which have survived the vicissitudes of centuries and are the oldest living organisms on this planet. To some, the forest is dark and forbidding, a place of mystery and hiding. Our folklore is full of such images: of great beasts lurking, of danger, of wild spirits, or a refuge for hunted man. To those who know the forest, it is friendly, a place of life. It is endlessly interesting and changing as one comes to understand the myriad life relationships between plants and animals. One should never be lonely there; the cities are a place for loneliness. An answer to the question "what is a wilderness?" then can be given only by individuals in terms of their outlook and interests. The definition is a social and a human matter that transcends definition of particular pieces of land as a wilderness area.

WILDERNESS CONCEPTS AND ATTITUDES

To the first settlers from Europe on the eastern shores of this country, the "wilderness" stretched for illimitable distances westward; much farther, in fact, than they imagined. Because they did not intend to live like the Indians already there, this wilderness was something to be conquered, cleared, settled and made fruitful on their terms.

As settlement proceeded westward, forests were cleared for farms, towns and cities. It is well to bear in mind that practically all of the United States east of the Great Plains

was originally heavily forested. The same was true of most of the Pacific West.

This sketch of history gives one major concept of wilderness: the situation when the first European settlers came. They regarded the frontier, the wilderness, as an obstacle, something to be conquered and controlled. The facts of settlement in the New World and the frontier spirit have historically and naturally colored much of our outlook and attitude regarding natural resources and of wilderness.

In sharp contrast is a second concept of a wilderness as a vignette of natural ecological and groundcover condition that should be kept in its original state. This idea has scientific meaning, but is not very practical as a general approach. It is somewhat museum-like.

Nature does not stand still. The trees and other plants grow and die whether or not they are affected by man. Natural forces of change—fire, storm, insects—operate crudely, often more so than man. To withdraw all protection such as forest-fire or insect-epidemic control from an area may lead to the destruction, not the preservation, of the forest. Protection *from* man is also equally important; individuals and groups of people can be very disturbing to natural conditions.

For these reasons, this preservation concept of wilderness has been applied to the designation of specific and usually rather small areas that represent certain specific forest or other ecosystem types of scientific interest. These are termed Natural Areas and a substantial number of them have been established in the United States. They constitute wilderness in a limited sense, are protected, and are available to people for study only.

A third general wilderness concept is rather subjective and personal. In memory, a forest we once roamed as a child was a wilderness. It may have been much man-influenced but that did not matter. Many of us have nostalgic memories of such areas and of their passing with increasing urbanization.

This general concept has much practical application. East of the Great Plains there is practically no virgin forest or other wild-

land that has not been affected by man. But in many areas the kindly and durable forest has become reestablished as farm fields and pastures have gone out of agricultural use, and as natural regrowth has followed cutting in forested areas. Many of these areas are very attractive; they constitute a wilderness in the remaking. With reasonable protection they are or will become areas that provide wilderness experience.

THE WILDERNESS PRESERVATION MOVEMENT

The frontier, as the pioneers knew and felt it, passed with the nineteenth century in this country. Soon after the middle of the century, railroads spanned the continent and by the end of the century a basic transportation network was complete. True, there were many and large areas of little or no settlement or other development but they were explored, mapped and known.

An appreciation of wilderness, of nature, of natural areas and the out-of-doors developed with the passing of the frontier. Rather naturally, it developed in the cities, with urban people who were the farthest removed from nature and were often those who least understood the realities of living in wildland areas. A movement with philosophical, religious, romantic, ethical, political, ecological and primitive components was applied to a social need for wild areas and for direct contact with nature in general. It grew to be a naturalist cult in some respects.

The name of Henry David Thoreau (1817–1862) is associated with the beginnings of this movement. He was the founder of a literary genre of nature writing. Other prominent names associated in one way or another with this general movement and continuing into the twentieth century include John James Audubon, John Muir, George Perkins Marsh, Francis Parkman, Jr., Gifford Pinchot, Theodore Roosevelt, Samuel H. Hammond, Frederick Law Olmstead, Charles Sprague Sargent and Aldo Leopold. The movement was led by a few dedicated people in a generally unconcerned country.

The development of the nature-wilderness-

forest preservation movement in the late 1800's and early 1900's is a fascinating story but only some high points of action can be traced here.

The world's first instance of large-scale wilderness preservation in the public interest occurred on March 1, 1872, when President Ulysses S. Grant signed an Act designating over two million acres of northwestern Wyoming as Yellowstone Park.¹

The park was created by a generally uninterested and apathetic Congress and public, and for a long time there was uncertainty over what to do with the area and how to administer it. But it was a beginning, and from it came the present National Park System.

The next major action was the withdrawal, primarily in the West, of millions of acres from the Public Domain lands as Forest Reserves. This began in the 1890's and continued into the next decade. Again, this act was urged by a few farsighted and dedicated people and was more or less slipped through the Congress without general public support. Gifford Pinchot was a major architect. The reserves were transferred from the Department of the Interior to the Department of Agriculture in 1905 and renamed National Forests, and the United States Forest Service was then born with Gifford Pinchot as its first chief. Primarily through purchase of privately owned lands, mostly during the 1920's and the 1930's, National Forests were established in the eastern United States and the present National Forest System of some 183 million acres of federally owned and managed lands developed.

In later years, other and large federally-owned areas were designated or acquired for public purposes. The Bureau of Land Management in the Department of the Interior is charged with the continuing management of all lands remaining in the Public Domain—about 300 million acres—reversing a former general and rather vague policy that all of these lands were subject to “ultimate disposal” from federal ownership. There are also large

areas managed for fish and wildlife by the Bureau of Sport Fisheries and Wildlife and some other public agencies. Extensive state parks and other state landownerships have developed. All of these areas have something to do with wilderness and wilderness experience. So do many large forested areas in private ownership. The frontier is gone, but large wildland areas remain.

There was a mixture of motives and purposes behind these earlier large-scale public land reservations. They included concern for nature, for wilderness and for preservation of some of the frontier, and a desire for the use of all forest and related resources in the public interest. Conflicts of interest were inevitable and they still continue. The early Forest Reserves were resented in the West as withdrawing lands from private entry and development and not in keeping with a frontier spirit. There was and is sharp disagreement between those who desire to restrict public lands for particular uses such as wilderness and National Parks, and those with a broader concept of applying, under management, some combination or blending of wildland resources uses for outdoor recreation, for timber production, for grazing of domestic livestock, for fish and game, as well as for wilderness. There is a continuing search for balance and harmony in land use in a political democracy.

The government's interest in wilderness has continued strongly over the years. Beginning in the 1920's, the United States Forest Service initiated the designation by the Secretary of Agriculture of a large number of wildland areas, mostly in the mountainous West, for wilderness-primitive recreational use, with other uses sharply restricted or eliminated. Nearly 90 such areas, aggregating about 14.5 million acres, have been so designated over the years. Areas of wilderness character are also held in the federally owned National Parks and National Wildlife Refuges but prior to the 1960's they were not considered specifically for wilderness designation.

A continuing tide of concern about wilderness preservation culminated, in 1964, in the passage by Congress of the Wilderness Act

¹ Roderick Nash, *Wilderness and the American Mind* (New Haven: Yale University Press, 1967).

(Public Law 88-557. 88th Congress) following long debate. The Act establishes a National Wilderness Preservation System of federally-owned lands ". . . to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." Wilderness is defined as "an area where the earth and its community of life are untrammelled by man, where man himself is a visitor and does not remain." Prohibited are roads, any commercial enterprise, use of motor vehicles or aircraft, and any structure or installation (with some exceptions for emergency human health and safety protection). A major feature of the act is that wilderness areas are recommended by the President and approved by act of Congress and consequently can be changed only in the same manner.

At the time of passage of the act, 53 wild or primitive areas aggregating some 9.1 million acres previously designated in the national forests that met wilderness criteria established in the act were taken into the system. In addition, a total of 115 areas aggregating nearly 50 million acres of federal lands of some wilderness potential in the National Forests, National Park System, and national wildlife refuges and rangeland areas are to be reviewed over a 10-year period for possible inclusion in the system. As this is written, the review is in progress and definite statistics cannot be given.

PERMANENT WILDERNESS

A formal and permanent federal wilderness system consequently now exists and will be enlarged in the future. It cannot be over-emphasized, however, that it is a great mistake to think that all opportunities for wilderness experience can or should be encompassed in this federal system. There are millions of other acres, public and private, large and small, whether formally designated or not, that can and do provide opportunities to see nature and enjoy outdoor recreation and wilderness experience.

A much larger objective is to use all lands, wild or otherwise, not only to conserve them to meet man's physical needs but to satisfy

his deeper needs for beauty and refreshment of spirit. A well-managed forest can be a place of usefulness and pleasure forever. There has to be some blending of use with preservation.

MAINTAINING A WILDERNESS

Establishment of a wilderness area is a first step, but keeping it so is a continuing need. Speaking as a professional forester who has spent years in the forest, sometimes with backpack, sometimes with saddle and packhorse, and sometimes on canoe trips into wilderness areas, I know stubborn realities must be faced if a wilderness is to serve its human purposes. Wilderness is a human point of view; to the wild animal there is no such thing as a wilderness—it is just home. As the act defines it, a wilderness is an area in which man is a visitor.

Let me explain a little. The Hiawatha concept of parting the branches to let us travel through and cutting boughs for our bed at night is appealing but inapplicable when a great many people do the same. By the facts of terrain and trails, only a very small portion of a wilderness area is traveled to any extent. There are only so many natural routes and logical places to camp, especially on horseback. Actual travel and use consequently must be concentrated in a relatively small area.

By their basic nature, wilderness areas can—
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Kenneth P. Davis was a district forest ranger in 1928-1931. He became chief of the Division of Forest Management Research in the U.S. Forest Service in 1940. In 1945 he became Dean of the School of Forestry at Montana State University. He became chairman of the department of forestry at the University of Michigan in 1950, and now holds the David T. Mason Professorship of Forest Land Use at the School of Forestry at Yale University. He is the author of *Forest Management: Regulation and Valuation* (New York: McGraw-Hill, 1966, 2nd ed.), and *Forest Fire: Control and Use* (New York: McGraw-Hill, 1959).

Noting the "ghostly relics of [railroad] obsolescence," this famous architect warns that "In debating solutions for our traffic problems, we should be more certain just what form our traffic problems will take in five or ten years."

Mass Transit and the Cities: Mobility and Place in America's Future

BY NATHANIEL ALEXANDER OWINGS
Partner, Skidmore, Owings and Merrill

UNNECESSARY WORDS are a most virulent form of pollution and a sea of discussion without action is an evil which must be avoided. My excitement at the prospect that young men and women all over the country are studying and debating the problems of conservation and pollution is my excuse for adding to the threatened pollution.

Adlai Stevenson said that youth understands that rhetoric is not action; that being not only the governing but the governed as well makes the task of reform or self-discipline more difficult in a democracy. So when we talk about improving our method of government and of adopting a discipline through which to establish the vital balance between the utilitarian and the aesthetic, we should also provide some concrete information about the nature of our problems; how we got this way, what we want to accomplish and what real tools are available.

Many young people are sufficiently disenchanted with the "System" that they can be mobilized to out-vote the spoilers and to contribute talent and energy without concern for immediate

profit. Spurred to cooperative action, students could embark on a crusade toward a common goal of creating vibrant cities, reforesting the rolling hills, cleansing our waters and estuaries. If this could be done, and if we can regard high density urban areas merely as parts of space related to open space and think of our whole nation as a part of a mosaic of interlocking geo-physical formations each with its own special unity, then perhaps we can see dimly for the future the recreation of the American Dream.¹

How can man in ever increasing numbers satisfy his requirements for mobility in such a way as to preserve the quality of the aesthetic in each phase of the process of mobility from origin to destination? How can he make the trip without exposing the elements of his environment to pollution?

It is my concern that youth, impatient, will soon overthrow restraint and turn to destruction, away from constructive efforts toward changing the environment. Youth, cutting through the gummy issues of our technological double-talk, has eyes to see and understands that, as Dr. Loren Eiseley expressed it recently, "In order to be a scientist, or a doctor, or an artist, or whatever, you first have to be a human being." Youth also knows, or suspects, the answer to another question asked by Dr. Eiseley: "What differences have recent scientific discoveries in physics, astronomy and biology made to man's

¹ S. Dillon Ripley, in the introduction to *The American Aesthetic* (N.Y.: Harper and Row, 1969).

conception, individually or collectively, of himself?" His answer to his own question is, "Very little, I believe."²

Our scientific efforts to date have not only failed to accomplish the announced effort to create a better life for man but have left instead varying degrees of disaster in their wake. They have not only failed but have succeeded in very nearly wrecking the world which they set out to save.

In my discussion of these subjects I shall rely on non-technical reasoning and apply the simple laws of humanity to the problem.

The question raised by my editor, and the expected answers, suggest conventional thinking; the assumption being that the current debate on the environment concerns the modification of existing systems using current techniques and ideologies. I reject this assumption and suggest that we go to the source; and I propose the elimination of that source when it proves to be the root of the evil. The evil, as I define it, is the "enshrined god of our social system, the priority of the dollar product derived from product exploitation," a system which tends to disregard or minimize the consequences to man, the user, or to his environment, the used.

Since the days of Theodore Roosevelt and Gifford Pinchot only a small minority have been involved in a struggle to reestablish the American aesthetic which, of course, cannot survive in the presence of pollution. Now the idea has suddenly become "The Thing" and the attention of the country has turned again to a renewed consciousness in perhaps the first acceptance of the problem as a national issue. There is a danger in this. Typical of the American, it becomes an instant, all-out issue demanding instant action; and the citizen demands the elimination of the pollution rather than the restructuring of the environment. The American's passions can be raised to a white heat but they cannot be sustained. The present fad—the elimination of the villain pollution—will fade and therefore we must develop a structured approach to a better environment.

² Loren Eiseley, *The Unexpected Universe* (N.Y.: Harcourt, Brace & World, 1969).

Youth, interested in the positive rather than the corrective, in an all-out solution rather than a piecemeal compromise, must not be fooled by the current public relations, Madison Avenue approach. I have no idea what the situation will be in six months when this article is published, but at this moment the talk is great and the signs of actual accomplishment, small. It may well be that again the people, the citizenry, will be drugged by talk into a comatose state of indifference. Youth is our best hope. Youth can go all out and demand a turn-around. The moon shot is a suitable exclamation point in time for such an action. With Archibald MacLeish young Americans will take another look, I am sure, at this "little planet we call our own."

We must first ask hard questions, questions which are only relevant if defined. For example: Who, we may ask, is the user? What kind of inventory, what kind of resources, and for whom—man or industry? On the question of pollution: Why permit any at all? Can it be controlled by government? At what level? What other level is there but the people? Perhaps the form of opinion-expressing which our youth has adopted by way of moratoriums, teach-ins, sit-ins and marches has a historical parallel. Perhaps they are following the pattern of the little island town called Ragusa (now Dubrovnik), the Venice of the Dalmatian coast, where the citizenry held elections of their officers once a month to insure instant government responsiveness to the people. Perhaps in our government the process of electing our officials every two years, or four years, or six years is too long to wait and is not responsive to the electorate.

Our future course of action in developing an ecologically balanced environment resolves itself into two opposing statements each of which is clear enough. On the one hand: "Thou shalt love thy neighbor as thyself"; on the other hand, in a different field, "A straight line is the shortest distance between two points." The first imperative, if followed, requires us to eliminate pollution everywhere by treating our neighbor as

we would have ourselves treated. The alternative imperative, which is really the rallying cry of the engineer-technicians, encourages us to drive highways through beloved groves of redwoods, build taller stacks to belch out more smoke for a quicker return on the invested dollar. The second is really the epigraph of the industrial age.

MOBILITY AND PLACE

Man's ultimate destiny rests within this dichotomy. Man is a lonely wanderer who for most of recorded time has wandered propelled by his own two legs or his horse's four, or on the wine dark sea behind billowing sails. He is wandering still, searching for that ideal of his instincts, a home; and all of his technology has done no more than obscure his yearning. He is searching still for a place he can call his own. "Mobility and Place"—to know these is to understand man in relation to his physical environment. Highways, mass transit and airports are simply clumsy interim devices to solve, at a surface level, a deeper urge. These crude stop-gap efforts have in themselves become major corruptions and can result only in further chaos.

To lessen pollution youth must seek to understand "Place"; and how, given a chance, man would like to use it. There seem to be three categories for high density living, polarized with the soul-reviving experience of open space. They are festival, trade and worship. Our country is very young and our Place is still in a crude state. It can evolve, however, into the high density, beehive, stratified, horizontal, pueblo-type city that I believe to be the evolving prototype.

We should not despair of obtaining this goal. Even an instant relief is not impossible. Cutting across the sticky web of special interests and product pushing, all automobile traffic except bus and taxi could be stopped today in almost any city. A rhythm could be set up so that freight could be delivered between 12:01 and 6:00 in the morning, and our cities could be very different places to live in when left for man's own use during the daylight hours. This revolution could be accomplished without any physical change

in the actual structure. I have seen New York City like this after a heavy snowstorm. It was lovely.

The American people have always been mobile and that mobility has for its objective a seeking out of a place, more often than not a new place; a moving a long way from one place to another until the American has run out of places and indulges in a kind of compulsive activity, a mobility for mobility's sake alone, like a caged white mouse on a treadmill.

RAIL TRANSPORT

The outline supplied me as a basis for my article omitted two venerable means of transportation, one of which is the railroad. To railroads we owe our incredible industrial development. The railroad trackage laid down from 1840 to 1870 exceeds in mileage and span of the continent all of the concrete free-ways and highways that our modern know-how has permitted us to build since 1920. The largest railroad station in the world, built in 1912 in Washington, D.C., is now empty and waiting forlornly to be converted to another use; nor have our major cities of Chicago, New York or Baltimore escaped this obsolescence. In each there are great areas of rusting trackage, intrusions that have proved to be a blessing in disguise because they provide choice locations within the city limits where new stratified, integrated cities within old cities can be developed.

But these ghostly relics of obsolescence might give us pause as to the possible fate of our mindless runaway love affair with the automobile. Perhaps we should consider whether or not, with our tendency to go all out, we are spending our substance on a faithless wench. In debating solutions for our traffic problems we should be more certain that we know just what form our traffic problems will take in five or ten years.

A much more venerable form of transportation, and one not quite so likely to become obsolete, is the two legs of man. This was, I am sure, omitted from the outline unconsciously, because man is now pretty much universally treated as a cipher, not as a na-

tural phenomenon. The omission of this form of transportation is pathetic proof of the ridiculous position in which man has allowed himself to be trapped. He finds himself no more than a token, dropped into the slot among millions to keep the multi-gearred production lines operating for the benefit of a process of producing, using, destroying, and again producing and using; an endless desolate cycle oriented toward oblivion.

Using man as a shill for the benefit of industrial systems locks him in and freezes his creative capacity, stultifies his sensibilities and permits his toleration of such monstrous immoralities as Vietnam. Let it be clear—it is man who is to be served, not the automobile industry, or the cement lobbyist or the land speculator; but it is also clear that this is not easy to accomplish. The withdrawal process will have painful after-effects since the system has penetrated deep into our consciousness. In reexamining man's needs it may very well be that we will find they are quite different from what we suspect or what we have assumed. Through the use of mass media the industrial system has hypnotized us into using what we do not need, do not want and cannot afford.

It is really fruitless to talk of the role of government at any level of society—national, state or local—in its present form. One must reject the status quo and start up the long, tortuous road of transition, considering different approaches toward another kind of existence. It is a temptation to suggest that society is on the way to extinction. If we are merely in transition and not on a terminal course, we must accept total change as part of the solution to the structuring of our central core cities. In the broadest strokes this involves turning the city on its side with horizontal stratification of services, layer on layer, and, rising to the top, man in high-density, low-level, pueblo-type dwellings. As this develops, the political web of obsolete forms, "coda civitas" of tax bodies, regulatory districts, city, county and state elected boards, commissions and legislative bodies will drop away, wither and die much as the

cocoon drops away when the moth emerges.

These happenings will occur—not by legislation but by the mysterious workings of a little understood force, a system of natural laws—the inscrutable laws of human nature which evidence themselves in their cumulative effect. It is through this mysterious force that our cities survive today and the intricate and involved laws of supply and demand function. Upon reflection one suddenly realizes that almost every basic function of man is controlled not by statute but by this mysterious force through which the rejection of the product/dollar-oriented system will occur. As we become clearly a leisure society served by automation—free to return to a healthier environment both urban and rural—youth movements with their perception of the need, their impatience with subterfuge and artificiality, will successfully revolt against the irrational justifications of our present way of life.

An illustration of these mysterious processes through which the natural laws govern us concerns our national effort to produce low-cost housing. For over forty years this has been a continuing subject of concern at all levels of government and, by and large, to no avail. In this same period of time, unheralded, unrecognized by commerce, industry or government, an industrial weed was growing in stature until finally the Federal Housing Administration recognized its existence by agreeing to guarantee its loans. This industrial weed by name: the mobile home. While the brains of government bureaucracy and private developers were laboring mightily and producing little, the mobile home had quietly moved along our highways and byways in ever increasing numbers, filling the demand for low-cost housing and gaining on the conventional home market to the extent that at the moment one out of every three homes erected in this country is a mobile home. It is this same mysterious force that has brought environment to the fore as a national issue, forcing the issue upon our electorate and public representatives. Government response to pressure, the enactment of laws, occurs after the need. The

role of government is to serve the people, not to control the people, and so we must determine the needs first and then suggest the role government must play in serving them.

Within the framework of highway planning and airport design I see the city as a central-core, high-density area in which most of mankind will live. The open space surrounding it will serve man's needs for recreation and food production, and will provide a habitat for wildlife and a reserve for wilderness areas.

Based on these parameters, Americans, in increasing numbers, are naturally migrating toward our principal cities, forming an ever denser band bordering the east, west and south coasts and the southern shores of our Great Lakes. Man will continue to live in higher and higher densities. There is a natural tendency towards higher density in our older cities that should be encouraged through technology. All natural locations for cities have been preempted. Satellite cities, new towns, unless these towns are within old cities, are unnatural and should not be encouraged. (England is a mini-country and its problems are not similar in any way to those of the United States.) We can organize our old cities so that they become comfortable places for man to work and to live. Our new old cities can satisfy biologically and socially the historic needs of man—places to live, places for festival, trade and worship.

Norbert Weiner, the inventor of cybernetics, cites the transistor as the greatest invention of man since the wheel. These inventions—cybernetics and the transistor—contain the seeds for the totally changing world.

As the population of the United States moves toward the four hundred million mark, automation through cybernetics will reduce repetitive labor tasks and turn man free to enjoy a greater proportion of his time in the out-of-doors. Electronics and communication will reduce the need to travel except for pleasure, for reaching into the open spaces for the enjoyment of nature. By and large, business communication in all its forms can travel the air waves to satisfy the demands of our industrial age.

This will change the pattern of our daily lives and therefore the character of our central cities and can eliminate many of its current problems: problems of physically accommodating the enormous mass, volume, weight and numbers of automobiles, goods and people who are required under our present system to change location sometimes twice or three times in a single twenty-four hour period from home to city and from city to home. Much of this travel and movement can become unnecessary—truly a startling thought. Means of transportation will change radically. Air transport, now used by less than ten per cent of the population, will reach a much wider segment of the people and will virtually eliminate all other means of long distance passenger travel.

Natural drainage basins and ecological subdivisions will supersede the present state-political boundaries. The high density centers of population, including their natural surrounding areas, open spaces and recreation facilities, will function as political units.

The supersonic plane will never be permitted to develop. It will be stopped by human outcry. National passenger transportation and fast freight will be handled by a system of regional jetports and local subsidiary lines of short runs and small plane ports.

As the bands of population density solidify, the suburbs will lose identity and the single family house will become a rare species.

Mass transportation is not new. London and Paris subways and tubes have been functioning since early in the 20th century. Small towns of our Middle West have enjoyed mass transit by means of electric interurban systems since the early 1900's. Many of these early systems, such as the one in central

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Nathaniel A. Owings is a founding partner in an architectural firm that has designed many of the nation's great commercial buildings. He was chairman of the President's Commission on the Design of Pennsylvania Avenue, Chairman of the Chicago Plan Commission and Vice Chairman of the California Highway Scenic Roads Commission.

"If [the National Environmental Policy Act of 1969] is successfully carried out, it signals a new era in this nation's use and enjoyment of its natural resources. The marine environment, and the coastal zone in particular, would benefit in large measure."

Coastal Areas and Seashores

BY WILLIAM S. BELLER
Office of Marine Resources, U.S. Department of the Interior

THE UNITED STATES clearly has a large stake in seeing that its coastal zone is developed in the best possible way. For this reason, all uses of the coastal zone must be considered by those who might want to alter it. Furthermore, in most instances the long-term health of the coastal zone should dominate. These are recent conclusions, spawned by worried ecologists, supported by several high-level study groups and first introduced into Congress in a spate of bills in 1969.

The coastal zone is the area where the sea and the land meet and where the fingers of the sea or of the Great Lakes poke into the land. It is also where the effects of these meetings are strongly felt. Thus, the coastal zone includes the land, waters and the lands beneath the waters near the shoreline.

For legislative purposes, the definition of the coastal zone is made explicit and arbitrary, something nature neglected to do. In one such definition,¹ the coastal zone is said to extend to the outer limit of the United States territorial sea. The territorial sea comprises state waters and reaches three nautical miles seaward for most coastal states. Historically, this was the distance a shore battery was able to propel a cannon ball.

There is no upper value limit that can be placed on the coastal zone, because it is integral to our lives. It provides an avenue for commerce, a nursery ground or habitat for most of our fish, a unique recreational area, a sink for our wastes, a storehouse of oil and other minerals, land for choice real estate developments and luxury hotels, sites for industrial development and a useful moat for national defense. More than 50 million people live in counties adjacent to the nation's coastal zone and use its resources.

Today there are about six times as many people in the United States as there were a century ago. They want services such as electricity, and places to relinquish their wastes. This means increased use of coastal waters. They make demands on the coastal zone in ways that may not be apparent: a pesticide that helps a farmer grow cherries of succulent size in a Michigan valley may result, under certain circumstances, in thousands of dead Coho salmon on the banks of Lake Michigan. By the same token, a factory that uses estuarine water to cool its equipment could pay taxes that upgrade the schools of the immediate area.

Who weighs the benefits against the costs? Even more important, how much benefit does a man receive from contemplating the wildlife in a salt marsh against the value to a community in filling the marsh with municipal wastes for a low-cost housing development?

¹ See the U.S. Senate bill S.3183, or the companion House bill H.R. 14845, cited as the "National Estuarine and Coastal Zone Management Act of 1970," referred to the respective Committees on Public Works, 91st Congress, 1st Session.

A PIECemeal APPROACH

The nation has used its coastal zone in a haphazard way because during most of the life of the United States there seemed to be enough coastal area for almost every use. Then, as uses began infringing on one another, the federal government tried to preserve those it considered most precious: the protection of commerce, of course; the conservation of fish and wildlife; the striving for cleaner water; and, more recently, the nation's decision to try to conserve all aspects of its natural environment. Except for the last effort, the others were piecemeal attempts to achieve a commendable goal: to get the most benefit out of the coastal zone. Unfortunately, the total well-being of the coastal zone was of only incidental interest.

The right of the federal government to regulate navigation is based on the commerce clause of the United States Constitution. The River and Harbor Act of 1899 exercised this right. It put the Army Corps of Engineers in charge of protecting the nation's navigable waters.² The Corps keeps shipping lanes open and builds new ones; it has the sole authority to grant or deny permits to dredge or fill in the navigable waters of the United States. Through this work, the Corps has affected the shape and aquatic life of the nation's waters more than any other government agency.

Since the turn of the century, the Corps has faithfully and expertly carried out its navigation mission, giving lesser attention to how its works might affect other values of

² The courts have held that navigable waters include waterways that either in their natural or improved condition are used, or can be used, for floating light boats or logs, even though the waterway may be obstructed by falls, rapids, sand bars, currents, etc., and even though the waterway has not been used for navigation for many years. For citation of cases see "Our Waters and Wetlands: How the Corps of Engineers Can Help Prevent their Destruction and Pollution," Committee on Government Operations, House Report No. 91-917, March 18, 1970, p. 17.

³ United States ex rel. Greathouse v. Dern, 289 U.S. 352 (1933).

⁴ As amended by the Act of August 12, 1958, 72 Stat. 563, Public Law 85-624; 16 U.S.C. 661. The original act of March 10, 1934 (48 stat. 401) was amended several times. Its official title was established in the legislation of August 12, 1958.

the coastal zone. In fact, until about 1968, the Corps' public notices announcing the filing of applications for permits to fill, dredge or construct works in navigable waters stated that the Corps' interest was in issues of navigation. Comments were invited solely on these issues.

The restricted view the Corps took of the River and Harbor Act was not required by law. Indeed, in 1933, the Supreme Court ruled³ that under the 1899 act the Department of the Army could properly deny a permit to erect a structure or make a fill in the Potomac River if the structure or fill would interfere with the public interest in having a parkway or recreation area. Yet the Corps could scarcely be criticized for the viewpoint it took through the years because trade was clearly important to the nation, and the voices of the conservationists were usually weak. Moreover, the public itself has only recently taken a profound interest in its natural environment. If the federal government is to be faulted, it should be in terms of not having had the foresight to anticipate the needs of the public, a task easily undertaken with the advantage of hindsight.

Certainly the nation's navigable waters have many more uses than simply to provide passage for ships. Such a view of United States waterways would destroy much of the value and beauty of the coastal zone. Recognizing this fact, Congress passed the Fish and Wildlife Coordination Act. This Act⁴ says that "wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs. . . ." In this way, Congress enlarged the scope of the River and Harbor Act of 1899. The Coordination Act requires that any federal agency that intends to modify the course of a body of water, or anybody else who needs federal permission to do so, must first consult with the Fish and Wildlife Service of the United States Department of Interior and with the equivalent state body. The intent of Congress was to focus on the need to conserve wildlife as it had already focused on water-resource development.

By 1958, then, the nation had legislation aimed at protecting two of the coastal zone's vital resources: commerce and wildlife. Long-term planning was still not evident, nor was attention given to other coastal values such as outdoor recreation, aesthetics and clean water; nor had the nation started looking at the conservation of its natural environment as a whole.

To make up for some of the deficiencies of the Fish and Wildlife Coordination Act, and to respond to increasing public interest in the problem of preserving the environment, the Secretary of the Interior and the Secretary of the Army signed a Memorandum of Understanding on July 13, 1967. Methods were set up under which the Corps would seek the advice of the Department of the Interior on questions relating to the natural resources and arising from dredging, filling or other work authorized by the Corps. If the Secretary of the Interior affirmed that impending work would have an adverse effect on fish and wildlife or other natural resources, recreation or water quality, then the Secretary of the Army would either deny a permit to do the work or impose conditions that he determined to be in the public interest.

The Corps used the Coordination Act and the Memorandum of Understanding when it rejected the application of land developers⁵ to fill in a large part of Boca Ciega Bay, near St. Petersburg, Florida. Although the Corps found that the proposed work would not interfere with navigation, the agency would not issue the permit because the fish and wildlife and other coastal resources of Boca Ciega Bay would be harmed.

The United States district court where the case was tried would not accede to the motion of the United States to dismiss the case. In this action, the court stated that the Fish and Wildlife Coordination Act does not give discretion to the Corps to deny permits on grounds other than navigation. The United States has appealed the case. Its outcome

will test the essence of the Coordination Act, which relies in large part on the navigation authority of the Corps to help protect some of our coastal resources.

USE THROUGH WATER QUALITY

The common denominator for just about every use of the coastal zone is the cleanliness or quality of the water. It is easy to see the importance of clean water for drinking and for the protection of the health of fish and wildlife, swimmers in coastal waters, and even strollers along the beaches who have a passable sense of smell. The commercial and industrial users of the nation's waters are also interested in water quality: shippers whose craft could be harmed by hazard of oil in navigable waters or damaged by debris; power-station operators whose equipment is cooled by water diverted from streams (provided the water has not already been overheated by upstream operators); and industrialists whose products could be destroyed by contaminants in the water used in the manufacturing process.

Unlike navigation, which is a use of the nation's waters, water quality is a characteristic of the water. Its consideration in law was the nation's first major step toward achieving a healthful coastal environment.

In 1965, both houses of Congress unanimously passed the Water Quality Act of 1965, which states that it is in the public interest "to enhance the quality and value of our water resources and to establish a national policy for the prevention, control and abatement of water pollution." The act contains a requirement of historic significance—that water quality standards for interstate waters be set by the states, and be approved as federal standards by the Secretary of the Interior. The standards identify uses of the waters, including agricultural, municipal, industrial, recreational, fishery and wildlife. They indicate the water quality necessary to support each use, and include plans to bring about and enforce this quality.

Control of water quality is necessary but in itself it does not guarantee the nation the best use of its coastal zone. Indeed, high

⁵ See *Zabel v. Tabb*, 296 F. Supp. 764 (D.C. M.D. Fla., Tampa Div., Feb. 17, 1969), now on appeal to the U.S. Court of Appeals, Fifth Circuit, No. 27555.

water quality alone is not an assurance of a good coastal environment. If municipalities and industries turn to incinerating or burying more of their wastes in order to raise water quality, air and land pollution will increase. Hotels and condominiums might wall out beaches from public use. Thus, avoiding pollution is only one way of deriving the most benefit out of the coastal zone. While of the three factors pollution is the dominant one and, unlike the others, contains the seeds of assuring the nation of long-term dividends, still it suffers from the myopia of excluding other environmental and, to some extent, social and economic considerations.

By the end of 1969, the nation was ready for a strong policy on the coastal zone. The events of the year had laid the groundwork: the year had started out with the release of the highly influential report⁶ of the Marine Commission (Commission on Marine Science, Engineering and Resources), which among other things lamented our lack of knowledge of the mechanics of the coastal zone. Three weeks after the Commission report was released, a gas blowout took place at an oil-drilling site about 5½ miles from Santa Barbara, California, leading to a disastrous oil spill. In October, the administration approved a strong program in marine science with emphasis on (a) devising a way to manage the nation's coastal zone in a beneficial manner; (b) getting the research needed by those who would manage the coastal zone; (c) finding a way to bring a body of water back to a healthy state; (d) contributing to a worldwide program aimed at understanding the oceans; and (e) increasing work in understanding the Arctic's natural environment. In the fall of the year, Congress appropriated \$800 million for fiscal year 1970 to build waste treatment

⁶ *Our Nation and the Sea* (Washington, D.C.: U.S. Government Printing Office, January, 1969, \$2.75). This report was followed by a set of three volumes of Panel Reports of the Marine Commission which contains the background material for the main report. Panel reports are also obtainable from the U.S. Government Printing Office, \$17.50 for the three volumes.

* *Editor's note:* For the text of this act, see *Current History*, July, 1970, p. 46.

plants to stem water pollution, an amount several times greater than the administration had requested. Throughout the year, it was clear that the public was beginning to realize the threat to the marine environment posed by a growing population despite the respite that might be expected from science and technology.

EMPHASIS ON THE ENVIRONMENT

On New Year's Day, 1970, President Richard M. Nixon signed the "National Environmental Policy Act of 1969."* It created the Council on Environmental Quality, a body set up to be as close to the President and as influential as his Council of Economic Advisers.

The Act declares that it is national policy to encourage productive and enjoyable harmony between man and his environment; to help prevent damage to the environment; and to seek more understanding of the ecosystems that serve the nation. If this policy is successfully carried out, it signals a new era in this nation's use and enjoyment of its natural resources. The marine environment, and the coastal zone in particular, would benefit in large measure.

The Environmental Act of 1969 calls upon all agencies of the federal government to:

—utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment; [and]

—include in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment, a detailed statement . . . on—

- (i) The environmental impact of the proposed action,
- (ii) any adverse environmental effects which can be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commit-

ments of resources which would be involved in the proposed action should it be implemented.

Thus it becomes national policy that the entire natural environment should be regarded as a coordinated unit. In addition, the long-term effects of actions on the environment are now to be weighed in the same scale as the short-term.

The Environmental Act calls upon federal agencies to exert their authorities to protect the natural environment. State and local governments would have a similar obligation because the bill the President signed declared "national," not simply "federal," policy.

The distance between policy and action is the same as that between a desire and a means to fulfill it. The Marine Commission brought to wide public attention the fragility and value of the coastal zone and described a way to ensure its continued usefulness to the nation.

THE MARINE COMMISSION

In the early 1960's, the federal establishment saw that the nation's relationship with its seas was bringing up critical problems, which would become unsolvable for future generations if something were not done soon. Furthermore, if the nation were concerned only with its present generation, with its present technology left unrestrained, the United States could utterly destroy its marine resources. Therefore, in 1966, Congress and the President created two marine bodies: the National Council on Marine Resources and Engineering Development to co-ordinate federal activities in the marine field; and the Marine Commission. The job of the Commission was, first, to analyze all aspects of the marine environment including recreational, industrial, scientific and managerial; second, to recommend a marine program for the nation that would meet its present and future needs; and lastly, to estimate the cost of such a program.

To stress the importance of the Council and the Commission, Congress and the President made the Vice President the chairman of the Council; Cabinet officials were its

members; some of the most eminent men in marine affairs and government organization in the country were appointed to the Commission. The Commission had four congressional advisers—Senator Norris Cotton (R., N.H.), Senator Warren G. Magnuson (D., Wash.), Representative Alton A. Lennon (D., N.C.), and Representative Charles A. Mosher (R., O.)—and was chaired by Julius A. Stratton, chairman of the Ford Foundation.

The Commission gave its formal report to Congress and the President on January 9, 1969. The importance of the report can be gauged by the reception the press gave to it on its release date five days later, when the Commission's findings appeared on the front page of just about every major metropolitan daily in the United States. Later in 1969 and in 1970, congressional committees held scores of hearings on a dozen or more bills derived in large part from the recommendations made in the Commission report.

The Commission gave much of its time to the problems of the coastal zone, and noted that the many claims on this area had outrun the present ability of local governments to deal effectively with these claims. The Commission recommended that each state set up its own agency with sufficient planning, co-ordinating and regulatory authority to ensure the healthy development of its coastal zone. This agency would have an overview of the state's needs with respect to the coastal zone and should be strong enough to surmount special pressures and local interests; to develop interstate arrangements where

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William S. Beller was on the staff of the President's Commission on Marine Science, Engineering and Resources. In the summer of 1969, he organized and chaired the advisory group that wrote "Hawaii and the Sea," the basic planning document for marine affairs in Hawaii. He also organized and chairs the Coastal Zone Management Committee of the Marine Technology Society, and is helping formulate coastal-zone management and research concepts for the United States Department of the Interior.

BOOK REVIEWS

OLD WORLD, NEW HORIZONS: BRITAIN, EUROPE, AND THE ATLANTIC ALLIANCE. BY EDWARD HEATH. (Cambridge, Mass.: Harvard University Press, 1970. 84 pages and index, \$4.95.)

The author presented the Godkin Lectures at Harvard in 1967; this book is a slightly updated version. As negotiator for Great Britain's entrance into the Common Market, then as leader of the Conservative party, he is a highly qualified spokesman whose views are generally well known. In his lectures he presents an excellent treatment of his subject for laymen. He favors a gradualist, pragmatic approach to building a European Community, which he sees as essential to Europe and to Great Britain. He believes that time has altered the nature of the non-European obstacles to British participation. The Commonwealth has changed radically and now subjects British policy to an examination no other member would tolerate, and he sees the proposed "Atlantic partnership" as the proper successor to the Anglo-American "special relationship."

G. W. Thumm
Bates College

LAW AMONG NATIONS: AN INTRODUCTION TO PUBLIC INTERNATIONAL LAW, 2d ed. BY GERHARD VON GLAHN. (London: Collier-Macmillan, Ltd., 1970. 727 pages, table of cases and index, \$10.95.)

This is a lucidly written if conventional text. The author's approach is primarily descriptive rather than normative; he seeks to explain what international law in various areas *is* rather than what it should be or how it came to be that way. It is a textual treatment rather than a collection of cases; the author includes a limited number of briefs, rather than lengthy ex-

cerpts. The book is well footnoted, with excellent lists of supplementary readings.

G.W.T.

DE GAULLE AND THE ANGLO-SAXONS. BY JOHN NEWHOUSE. (New York: Viking Press, 1970. 364 pages and index, \$8.50.)

Newhouse presents his version of a now widely-held hypothesis: That de Gaulle consistently attempted to shape world history toward "a quadripolar world system, the four power centers being Washington and Moscow, joined eventually by Peking and Paris." He supports his thesis with high quality journalism, perceptive and interesting, illustrated with flash-backs, replete with sidelights and quotations from unidentified sources. He has written for the layman; his argument is less closely reasoned, less thoroughly developed, and much less tightly organized than the scholar would wish. His footnotes often merely identify highly reputable quoters of unidentified sources, especially C. L. Sulzberger and André Fontaine. But the scholar, too, will find the "feel" of the situations and the sidelights presented by the author valuable as well as interesting.

G.W.T.

PIERRE LAVAL AND THE ECLIPSE OF FRANCE, 1931-1945. BY GEOFFREY WARNER. (New York: The Macmillan Company, 1969. 460 pages, appendix, bibliography and index, \$8.95.)

Pierre Laval is one of the most controversial figures in recent European history. Few authors have examined his career without passion, mainly hostile, and the prevailing legend is of a dark, sinister, treacherous man, aesthetically displeasing as well as politically repugnant, whose ac-

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CURRENT DOCUMENTS

Water Quality Improvement Act of 1970

On April 3, 1970, Congress amended the Federal Water Pollution Control Act to strengthen it, and established an Office of Environmental Quality in the Executive Office of the President.¹ Excerpts from the text follow:

TITLE I: WATER QUALITY IMPROVEMENT²

• • •

“(b)(1) The Congress hereby declares that it is the policy of the United States that there should be no discharges of oil into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone.

“(2) The discharge of oil into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone in harmful quantities as determined by the President under paragraph (3) of this subsection, is prohibited, except (A) in the case of such discharges into the waters of the contiguous zone, where permitted under article IV of the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended, and (B) where permitted in quantities and at times and locations or under such circumstances or conditions as the President may, by regulation, determine not to be harmful. Any regulations issued under this subsection shall be consistent with maritime safety and with marine and navigation laws and regulations and applicable water quality standards.

“(3) The President shall, by regulation, to be issued as soon as possible after the date of enactment of this paragraph, determine for the purposes of this section, those quantities of oil the discharge of which, at such times, locations, circumstances, and conditions, will be harmful to the public health or welfare of the United States, including, but not limited to, fish, shellfish, wildlife, and public and private property, shorelines, and beaches, except that in the case of the discharge of oil into or upon the waters of the contiguous zone, only those discharges which threaten the

fishery resources of the contiguous zone or threaten to pollute or contribute to the pollution of the territory or the territorial sea of the United States may be determined to be harmful.

“(4) Any person in charge of a vessel or of an onshore facility or an offshore facility shall, as soon as he has knowledge of any discharge of oil from such vessel or facility in violation of paragraph (2) of this subsection, immediately notify the appropriate agency of the United States Government of such discharge. Any such person who fails to notify immediately such agency of such discharge shall, upon conviction, be fined not more than \$10,000, or imprisoned for not more than one year, or both. Notification received pursuant to this paragraph or information obtained by the exploitation of such notification shall not be used against any such person in any criminal case, except a prosecution for perjury or for giving a false statement.

“(5) Any owner or operator of any vessel, onshore facility, or offshore facility from which oil is knowingly discharged in violation of paragraph (2) of this subsection shall be assessed a civil penalty by the Secretary of the department in which the Coast Guard is operating of not more than \$10,000 for each offense. No penalty shall be assessed unless the owner or operator charged shall have been given notice and opportunity for a hearing on such charge. Each violation is a separate offense. Any such civil penalty may be compromised by such Secretary. In determining the amount of the penalty, or the amount agreed upon in compromise, the appropriateness of such penalty to the size of the business of the owner or operator charged, the effect on the owner or operator's ability to continue in business, and the gravity of the violation, shall be considered by such Secretary. The Secretary of the Treasury shall withhold at the request of such Secretary the

¹ Titles I and II of Public Law 91-224, April 3, 1970.

² Cited as the Water Quality Improvement Act of 1970.

clearance required by section 4197 of the Revised Statutes of the United States, as amended (46 U.S.C. 91), of any vessel the owner or operator of which is subject to the foregoing penalty. Clearance may be granted in such cases upon the filing of a bond or other surety satisfactory to such Secretary.

"(c)(1) Whenever any oil is discharged, into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone, the President is authorized to act to remove or arrange for the removal of such oil at any time, unless he determines such removal will be done properly by the owner or operator of the vessel, onshore facility, or offshore facility from which the discharge occurs.

• • •

"(d) Whenever a marine disaster in or upon the navigable waters of the United States has created a substantial threat of a pollution hazard to the public health or welfare of the United States, including, but not limited to, fish, shellfish, and wildlife and the public and private shorelines and beaches of the United States, because of a discharge, or an imminent discharge, of large quantities of oil from a vessel the United States may (A) coordinate and direct all public and private efforts directed at the removal or elimination of such threat; and (B) summarily remove, and, if necessary, destroy such vessel by whatever means are available without regard to any provision of law governing the employment of personnel or the expenditure of appropriated funds. Any expense incurred under this subsection shall be a cost incurred by the United States Government for the purposes of subsection (f) in the removal of oil.

"(e) In addition to any other action taken by a State or local government, when the President determines there is an imminent and substantial threat to the public health or welfare of the United States, including, but not limited to, fish, shellfish, and wildlife and public and private property, shorelines, and beaches within the United States, because of an actual or threatened discharge of oil into or upon the navigable waters of the United States from an onshore or offshore facility, the President may require the United States attorney of the district in which the threat occurs to secure such relief as may be necessary to abate such threat, and the district courts of the United States shall have jurisdiction to grant such relief as the public interest and the equities of the case may require.

"(f)(1) Except where an owner or operator can prove that a discharge was caused solely by (A) an act of God, (B) an act of war, (C) negligence on the part of the United States Government, or (D) an act or omission of a third party

without regard to whether any such act or omission was or was not negligent, or any combination of the foregoing clauses, such owner or operator of any vessel from which oil is discharged in violation of subsection (b)(2) of this section shall, notwithstanding any other provision of law, be liable to the United States Government for the actual costs incurred under subsection (c) for the removal of such oil by the United States Government in an amount not to exceed \$100 per gross ton of such or \$14,000,000, whichever is lesser, except that where the United States can show that such discharge was the result of willful negligence or willful misconduct within the privity and knowledge of the owner, such owner or operator shall be liable to the United States Government for the full amount of such costs. Such costs shall constitute a maritime lien on such vessel which may be recovered in an action in rem in the district court of the United States for any district within which any vessel may be found. The United States may also bring an action against the owner or operator of such vessel in any court of competent jurisdiction to recover such costs.

"(2) Except where an owner or operator of an onshore facility can prove that a discharge was caused solely by (A) an act of God, (B) an act of war, (C) negligence on the part of the United States Government, or (D) an act or omission of a third party without regard to whether any such act or omission was or was not negligent, or any combination of the foregoing clauses, such owner or operator of any such facility from which oil is discharged in violation of subsection (b)(2) of this section shall be liable to the United States Government for the actual costs incurred under subsection (c) for the removal of such oil by the United States Government in an amount not to exceed \$8,000,000, except that where the United States can show that such discharge was the result of willful negligence or willful misconduct within the privity and knowledge of the owner, such owner or operator shall be liable to the United States Government for the full amount of such costs. The United States may bring an action against the owner or operator of such facility in any court of competent jurisdiction to recover such costs. The Secretary is authorized, by regulation, after consultation with the Secretary of Commerce and the Small Business Administration, to establish reasonable and equitable classifications of those onshore facilities having a total fixed storage capacity of 1,000 barrels or less which he determines because of size, type, and location do not present a substantial risk of the discharge of oil in violation of subsection (b)(2) of this section, and apply with respect to such classifications differing limits of liability which may be less than the amount contained in this paragraph.

"(3) Except where an owner or operator of an offshore facility can prove that a discharge was caused solely by (A) an act of God, (B) an act of war, (C) negligence on the part of the United States Government, or (D) an act or omission of a third party without regard to whether any such act or omission was or was not negligent, or any combination of the foregoing clauses, such owner or operator of any such facility from which oil is discharged in violation of subsection (b) (2) of this section shall, notwithstanding any other provision of law, be liable to the United States Government for the actual costs incurred under subsection (c) for the removal of such oil by the United States Government in an amount not to exceed \$8,000,000, except that where the United States can show that such discharge was the result of willful negligence or willful misconduct within the privity and knowledge of the owner, such owner or operator shall be liable to the United States Government for the full amount of such costs. The United States may bring an action against the owner or operator of such a facility in any court of competent jurisdiction to recover such costs.

"(g) In any case where an owner or operator of a vessel, of an onshore facility, or an offshore facility, from which oil is discharged in violation of subsection (b) (2) of this section proves that such discharge of oil was caused solely by an act or omission of a third party, or was caused solely by such an act or omission in combination with an act of God, an act of war, or negligence on the part of the United States Government, such third party shall, notwithstanding any other provision of law, be liable to the United States Government for the actual costs incurred under subsection (c) for removal of such oil by the United States Government, except where such third party can prove that such discharge was caused solely by (A) an act of God, (B) an act of war, (C) negligence on the part of the United States Government, or (D) an act or omission of another party without regard to whether such act or omission was or was not negligent, or any combination of the foregoing clauses. If such third party was the owner or operator of a vessel which caused the discharge of oil in violation of subsection (b) (2) of this section, the liability of such third party under this subsection shall not exceed \$100 per gross ton of such vessel or \$14,000,000, whichever is the lesser. In any other case the liability of such third party shall not exceed the limitation which would have been applicable to the owner or operator of the vessel or the onshore or offshore facility from which the discharge actually occurred, if such owner or operator were liable. If the United States can show that the discharge of oil in violation of subsection (b) (2) of this section was the

result of willful negligence or willful misconduct within the privity and knowledge of such third party, such third party shall be liable to the United States Government for the full amount of such removal costs. The United States may bring an action against the third party in any court of competent jurisdiction to recover such removal costs.

"(h) The liabilities established by this section shall in no way affect any rights which (1) the owner or operator of a vessel or of an onshore facility or an offshore facility may have against any third party whose acts may in any way have caused or contributed to such discharge, or (2) the United States Government may have against any third party whose actions may in any way have caused or contributed to the discharge of oil.

"(i) (1) In any case where an owner or operator of a vessel or an onshore facility or an offshore facility from which oil is discharged in violation of subsection (b) (2) of this section acts to remove such oil in accordance with regulations promulgated pursuant to this section, such owner or operator shall be entitled to recover the reasonable costs incurred in such removal upon establishing, in a suit which may be brought against the United States Government in the United States Court of Claims, that such discharge was caused solely by (A) an act of God, (B) an act of war, (C) negligence on the part of the United States Government, or (D) an act or omission of a third party without regard to whether such act or omission was or was not negligent, or of any combination of the foregoing clauses.

Control of Hazardous Polluting Substances

"SEC. 12. (a) The President shall, in accordance with subsection (b) of this section, develop, promulgate, and revise as may be appropriate, regulations (1) designating as hazardous substances, other than oil as defined in section 11 of this Act, such elements and compounds which, when discharged in any quantity into or upon the navigable waters of the United States or adjoining shorelines or the waters of the contiguous zone, present an imminent and substantial danger to the public health or welfare, including, but not limited to, fish, shellfish, wildlife, shorelines, and beaches; and (2) establishing, if appropriate, recommended methods and means for the removal of such substances.

• • •
"(d) Whenever any hazardous substance is discharged into or upon the navigable waters of the United States or adjoining shorelines or the waters of the contiguous zone, unless removal is immediately undertaken by the owner or operator of the vessel or onshore or offshore facility from which the discharge occurs or which caused the

discharge, pursuant to the regulations promulgated under this section, the President, if appropriate, shall remove or arrange for the removal thereof in accordance with such regulations. Nothing in this subsection shall be construed to restrict the authority of the President to act to remove or arrange for the removal of such hazardous substance at any time.

Control of Sewage

"(b)(1) As soon as possible, after the enactment of this section and subject to the provisions of section 5(j) of this Act, the Secretary, after consultation with the Secretary of the department in which the Coast Guard is operating, after giving appropriate consideration to the economic costs involved, and within the limits of available technology, shall promulgate Federal standards of performance for marine sanitation devices (hereafter in this section referred to as 'standards') which shall be designed to prevent the discharge of untreated or inadequately treated sewage into or upon the navigable waters of the United States from new vessels and existing vessels, except vessels not equipped with installed toilet facilities. Such standards shall be consistent with maritime safety and the marine and navigation laws and regulations and shall be coordinated with the regulations issued under this subsection by the Secretary of the department in which the Coast Guard is operating. The Secretary of the department in which the Coast Guard is operating shall promulgate regulations, which are consistent with standards promulgated under this subsection and with maritime safety and the marine and navigation laws and regulations, governing the design, con-

struction, installation, and operation of any marine sanitation device on board such vessels.

• • • Pollution Control in Great Lakes

"Sec. 15. (a) The Secretary, in cooperation with other Federal departments, agencies, and instrumentalities is authorized to enter into agreements with any State, political subdivision, interstate agency, or other public agency, or combination thereof, to carry out one or more projects to demonstrate new methods and techniques and to develop preliminary plans for the elimination or control of pollution, within all or any part of the watersheds of the Great Lakes. Such projects shall demonstrate the engineering and economic feasibility and practicality of removal of pollutants and prevention of any polluting matter from entering into the Great Lakes in the future and other abatement and remedial techniques which will contribute substantially to effective and practical methods of water pollution elimination or control.

"(b) Federal participation in such projects shall be subject to the condition that the State, political subdivision, interstate agency, or other public agency, or combination thereof, shall pay not less than 25 per centum of the actual project costs, which payment may be in any form, including, but not limited to, land or interests therein that is needed for the project, and personal property or services the value of which shall be determined by the Secretary.

"(c) There is authorized to be appropriated \$20,000,000 to carry out the provisions of this section, which sum shall be available until expended.

• • •

TITLE II: ENVIRONMENTAL QUALITY³

SEC. 202. (a) The Congress finds—

- (1) that man has caused changes in the environment;
- (2) that many of these changes may affect the relationship between man and his environment; and
- (3) that population increases and urban concentration contribute directly to pollution and the degradation of our environment.

(b)(1) The Congress declares that there is a national policy for the environment which provides for the enhancement of environmental quality. This policy is evidenced by statutes heretofore enacted relating to the prevention, abatement, and control of environmental pollution, water and land

resources, transportation, and economic and regional development.

(2) The primary responsibility for implementing this policy rests with State and local governments.

(3) The Federal Government encourages and supports implementation of this policy through appropriate regional organizations established under existing law.

(c) The purposes of this title are—

- (1) to assure that each Federal department and agency conducting or supporting public works activities which affect the environment shall implement the policies established under existing law; and
- (2) to authorize an Office of Environmental Quality, which, notwithstanding any

(Continued on page 114)

³ Cited as the Environmental Quality Improvement Act of 1970.

THE COSTS OF FIGHTING POLLUTION

(Continued from page 81)

This is what we expect with any regressive tax system. To the extent that federal funds are used to defray municipal sewage costs, some of the revenue for the necessary facilities will be obtained through the progressive income tax. This would probably place more of the burden (i.e., reduced consumption) on the upper income groups. However, if we are to resort to a user's charge which seems to be the best way of curbing our use of water and air, the progressive income tax can only be used to a limited extent. On balance, therefore, the heaviest burden is likely to fall on the lower income groups.

The question of the impact of a pollution control program on the G.N.P. is even more speculative. In large part, it is dependent on the assumptions that are made and how one defines G.N.P. For instance, some economists have argued that the damage caused by ED should be subtracted from the figures reported for G.N.P. How, they ask, can you count in the sales value of a chemical plant's output if in the process of production, fish are killed and the fish catch is reduced? In the same way, how can you count in the output of machinery for chemical waste treatment when this machinery really does not add to production; it merely does what should have been done in the first place?

Under present practices, expenditures for pollution control do count as additions to G.N.P. Consequently, an energetic enforcement program of pollution control would probably not result in a significant fall in G.N.P. as presently defined, especially in the short run. Expenditures and incomes would merely shift somewhat from consumption industries to pollution control industries as indicated earlier. However, the dynamic effect of such a change is a little harder to predict. A reduction of consumption relative to the rest of G.N.P. could affect incentives and could lead to a fall in G.N.P., just as an in-

crease in consumption relative to total G.N.P. led to a jump in the G.N.P. For example, when the income tax rates were cut in 1964, the increase in consumption set off a spurt in the growth of G.N.P. The fall in consumption due to the diversion of resources for pollution control could have the opposite effect and this could precipitate a fall in G.N.P.

Some critics have argued that the only long-run solution to ED is to call a halt to industrialization and economic growth. They argue that it is our fetish with growth that has caused such abuse to nature. To some extent they are right. Industrialization is like cooking an omelette. There is no way to avoid cracking eggs. Not only is this hard on the egg, but we then have the shells to dispose of. Yet it is unrealistic to expect that many people will agree to forego their expectations of increased comforts, much less give up existing comforts.

Again, caution is necessary to insure that those who call loudest for a halt to economic growth are not those who can best afford a reduction in their standards of living. Lower income groups generally are likely to take a dim view of a program that will not only cut their present consumption, but curb their hopes for future improvements. By no means is this meant to suggest that efforts to prevent ED should be halted. But it is necessary to remember that such a program will be expensive and that all will have to bear the costs. Unfortunately there seems to be no other alternative.

THE FEDERAL GOVERNMENT AND THE ENVIRONMENT

(Continued from page 83)

The most important feature of this act would be the strengthening of the right of individuals to use the federal government's judicial system to protect their own environment. Because the environment concerns every person, it is fitting that every person be given the right to protect it. At the same time, of course, each individual should act to preserve it.

A LOOK AT NATIONAL PRIORITIES

(Continued from page 72)

opens up a further enormous resource of consumable energy. Similarly, with material resources, the growth of knowledge opens up new materials which were not available before, like plastics, and like aluminum, magnesium and titanium in the field of metals. Our economy is already highly dependent upon nitrogen extracted from the atmosphere and it is very likely that in the future we will rely more upon materials extracted from sea water. It must be emphasized, however, that this technology does not yet exist, and that it may take all the present intellectual resources of the human race to produce it in time.

THE SOCIAL SYSTEM

Our success in solving this technological problem will depend very largely on our success in solving the problem of political and social organization. The present international system, and indeed the whole present world social system, is a system under sentence of death. It has a positive probability of major nuclear war built into it, and either the system must be transformed before this happens, or it will be transformed after it happens in ways that are going to be highly disagreeable. The problem in a nutshell is how do we move from a system of unstable deterrence to a system which has enough community in it to control the threat system. Whether this involves world government we do not really know. The search for world community, however, is the major national interest of every nation, simply because it is the price of human survival, and national survival without human survival is absurd.

The price of human survival is a minimum amount of world community. The price of community is the integration of previously excluded groups and persons. A community in which large numbers of people feel that they are excluded from its benefits cannot

survive or thrive. This means not only a political democracy, which is one method of integrating large numbers of people into the decision-making process of the society, but it includes an extension of the "grants economy," that is, the organization of one-way transfers of exchangeables, towards a greater equality of distribution than either capitalism or socialism now provides.

It is a strange paradox that the demand of the future is for a world which is both more conservative than any conservative can imagine and more radical than any revolutionary dreams. It will be conservative in the sense that it will have to treasure and conserve every drop of water, every grain of material, every erg of energy, every bit of information, every impulse of goodwill. We are moving forward not into an age of abundance, but into an age of scarcity and economizing in which we are going to have to find a high quality of human life in the middle of a highly conservative and economizing social system.

The problems of creating such a social system, however, are much more radical and difficult than any revolutionary thinks. The socialist-capitalist controversy is largely irrelevant to it. Mere transfers of power are largely irrelevant. Neither the international corporation nor the national state nor the socialist state is in any way adequate to the task ahead. Reentry is much more difficult and dangerous than takeoff. It is a task which should capture the imagination of the youth of the world and inspire everyone to dedicate himself to its achievement.

LIVEABLE CITIES

(Continued from page 90)

industry and federal aid should be redistributed to non-urban areas. This approach contains two serious flaws. First and foremost, there is no evidence that density, by itself, is a major contributor to America's urban problems. Many United States cities are less densely populated than major cities in Canada and Europe. Yet the difficulties

of crime and physical blight are much worse in the United States because of such factors as poverty, racial discrimination and unstructured and uncontrolled development. Second, there is no guarantee that social and cultural conditions in non-urban areas would suddenly improve to satisfy today's more cosmopolitan population. The technological growth of our society, exemplified by the pervasive influence of television, has greatly altered people's expectations and aspirations. The vast range of services and the availability of public facilities staffed by highly trained specialists (which urban citizens expect) and the wide range of social and cultural facilities, stores and so forth available from the private sector in urban areas precisely because they are places of highly concentrated population could not be duplicated in little centers of dispersed population all around the country. Personnel is not there to staff them: money is not there to build them; and, if it were, there would not be sufficient people to make efficient use of them.

The key to avoiding misadventures is comprehensive planning, which ties physical improvements into overall community growth patterns, coordinating transportation, housing, industry and other public facility development in one closely knit growth plan which features the needs of individual citizens for a better urban existence. Neglect of individual needs is a glaring failure of too many recent physical development efforts.

The frustrations arising from racial discrimination, hunger, sickness and poverty can negate any of the improvements gained from upgrading physical facilities. For this reason, the current preoccupation with improvement of the physical environment should be viewed with some misgiving. There is no question that massive efforts to improve our environment are necessary today to assure a pleasant, healthy tomorrow. But present efforts in the environmental field resemble too closely the preoccupation with buildings and highways in the late 1950's and early 1960's. Efforts to upgrade job opportunities, to end hunger, to improve education and to control disease among the poor cannot take

a back seat to environmental improvement now as they took a back seat to building construction a decade ago. With a national commitment we can upgrade the environment and improve the prospects of all our citizens. Both are necessary if the dream of beautiful, liveable cities is to become a reality.

MASS TRANSIT AND THE CITIES

(Continued from page 99)

Indiana which enjoyed popularity in the early 1900's, have been eliminated. Mass transportation, like any other idea subject to all the whims of our American enthusiasm, can be overdone. But in the main high density coastal areas of the east and west and the central states, high density mass transportation will prevail as a public utility.

I have tried to show that Mobility and Place are inseparable; that the individual's concern with these matters is the prime means by which a workable means of clarifying the environment will occur. I believe that there is no substitute for the individual's concern and that his concern, properly advanced, can be the motivation through which major changes in the environment can occur.

Government at any level cannot be depended upon to administer these grave problems. There is no substitute for individual vigilance. I have tried to show that great changes are in process and that to discuss ways and means of correcting the evils and defects of our cities and our open spaces, our means of transportation, without facing up to the inevitability of total change is a waste of time.

To summarize, the role of the federal, state and local governments is in a state of transition and will totally change because the present systems simply do not work. A completely different system involving regional ecological units, governed by means of nationally administered environmental controls under a new form of central city government, will prevail.

A MORAL ISSUE

The allocation of responsibility cannot be divested from the individual. Ecology is complicated and little understood, and to educate even the intellectually elite in the science of ecology will require serious concentration of an intensity which has never before been exerted on any national issue in the history of our country.

Our entire point of view must change. This will involve the termination of the war in Vietnam and the lessened importance of the dollar and will require a change of philosophy towards a national conviction that beauty and the aesthetic are *good economics*.

The steps needed to accomplish this are under way. They are mystical and invisible. They involve youth and, like youth, are inevitable. The penalty for not making these changes is extinction. All these changes can be made through the efforts of a benign dictatorship. The dictator will be the conscience of the human being and will be directed by our youth and the young in spirit.

WILDERNESS AND FORESTS TOMORROW

(Continued from page 94)

not withstand heavy human use without controls. Neither the noble red man, the frontiersman, nor the present-day citizen is noted for natural conservation impulses; these have to be acquired. On main routes of travel, trails or portages, I have seen human-bestowed litter of all kinds and stripped trees that look like plucked chickens. Visitors also start forest fires on occasion; they bypass inadequately constructed or maintained trails and unsightly shortcuts develop.

There is real need to inculcate and apply a wilderness ethic of human behavior, and at the same time to face the necessity for commonsense provision of facilities of certain kinds and in certain places. These facilities are needed to preserve the very thing a wilderness area was established for—to preserve

nature untrammeled by evidences of man. Too often and increasingly, such evidences are painfully apparent, but they are sometimes swept under the carpet by romantic but unthinking enthusiasm about the truly wonderful and healing nature of a wilderness experience.

A larger question in the future of wilderness areas is the interests of the many versus the few. Only a relatively few are equipped and financially able to enjoy a wilderness experience in a large area. What about the many who cannot go beyond a day's walk or an overnight trip? Their interests count, too, and have led to the consideration of the concept of travel corridors in some large wilderness areas from which a more dispersed pattern of use, accessible to more people, is possible.

The problem of use, essentially the problem of protecting wilderness *from* people and at the same time making such areas available to them, will confront wilderness area management in the future. There are no easy or simplistic answers. Wilderness areas are for people to see and to appreciate, to enjoy but not to destroy, to use but not to abuse, to have now and in the future as part of our American heritage.

COASTAL AREAS AND SEASHORES

(Continued from page 104)

they are needed; and to amalgamate within the state the host of overlapping and often competing coastal-zone activities of the various federal agencies. At the same time, federal legislation would help the states by giving them guidelines for organizing their coastal-zone activities, and grants to help in the detail planning.

Unfortunately, often we do not know the extent to which our activities are endangering our marine resources nor, for that matter, the extent of the marine resources we have within our grasp. To help solve these problems, the Commission also recommended an extensive research program aimed at under-

standing the workings of our natural environment—the interactions among sea, air and land—in order to predict its course.

Tackling problems seemingly of more immediate and direct interest to the nation's citizens was a proposed network of "Coastal Zone Laboratories." These would examine the scientific and technical problems involving estuaries and the coastal zone. One great benefit from these laboratories would be their ability to advise their municipal and state governments about the technical factors that would affect the management of the coastal zone. Thus, the local bodies and the states would have the research data they would need to be able to manage their marine resources in an effective and rational manner.

THE PROBLEMS AHEAD

Congress has several bills⁷ in front of it in which plans for managing the nation's coastal zone are laid out. The bills differ in detail important in an administrative sense, but the aims are almost identical. In the administration bill, grant money would be given to the coastal states to assist them in developing a comprehensive management program for the land and water resources of the coastal zone. The grants would not cover more than half the cost of developing the program, and the states individually would have to pay for the other half. If the Secretary of the Interior approves the coastal state's management program, the state is then eligible for operating grants, which would pay for half the costs of administering the management program, up to a prescribed dollar limit on the part of the federal government.

The keystone in the administration bill is that before a state can get operating grants, it must show that it can require local zoning to conform with the state management plan. A number of local governments consider their zoning prerogatives as sacred, and almost forget that these powers were originally

⁷ S.3183 and H.R. 14845, loc. cit.; U.S. Senate bills S.2802 and S.3460, the former cited as the "Coastal Zone Management Act of 1969," and the latter, the "Coastal Zone Management Act of 1970," 91st Congress, both referred to the Committee on Commerce.

derived from the state governments. Regardless, it would be very difficult to try to manage a coastal zone in the bits and pieces local governments represent. States, and even multi-state regions, would be the more logical units to use. Water and its resources are never conscious of political boundaries. Similarly, coastal-zone research should probably be done on a regional basis to be fully effective.

The United States, in recognizing its role in the coastal zone, is seeking to know this area as a complete system, not addressing isolated problems to the detriment of others. The nation is working to get the data needed to understand as fully as possible how the system operates so that the coastal zone can be enjoyed by all generations. We build for the generations that come after us. The nation has also recognized that the coastal zone and the marine environment are part of the natural environment, and ultimately must be considered in this light.

CURRENT DOCUMENTS

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other provision of law, shall provide the professional and administrative staff for the Council on Environmental Quality established by Public Law 91-190.

Office of Environmental Quality

SEC. 203. (a) There is established in the Executive Office of the President an office to be known as the Office of Environmental Quality (hereafter in this title referred to as the "Office"). The Chairman of the Council on Environmental Quality established by Public Law 91-190 shall be the Director of the Office. There shall be in the Office a Deputy Director who shall be appointed by the President, by and with the advice and consent of the Senate.

(b) The compensation of the Deputy Director shall be fixed by the President at a rate not in excess of the annual rate of compensation payable to the Deputy Director of the Bureau of the Budget.

• • •

(d) In carrying out his functions the Director shall assist and advise the President on policies and

programs of the Federal Government affecting environmental quality by—

(1) providing the professional and administrative staff and support for the Council on Environmental Quality established by Public Law 91-190;

(2) assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, and those specific major projects designated by the President which do not require individual project authorization by Congress, which affect environmental quality;

(3) reviewing the adequacy of existing systems for monitoring and predicting environmental changes in order to achieve effective coverage and efficient use of research facilities and other resources;

(4) promoting the advancement of scientific knowledge of the effects of actions and technology on the environment and encourage the development of the means to prevent or reduce adverse effects that endanger the health and well-being of man;

(5) assisting in coordinating among the Federal departments and agencies those programs and activities which affect, protect, and improve environmental quality;

(6) assisting the Federal departments and agencies in the development and interrelationship of environmental quality criteria and standards established through the Federal Government;

(7) collecting, collating, analyzing, and interpreting data and information on environmental quality, ecological research, and evaluation.

BOOK REVIEWS

(Continued from page 105)

tions are less explained than excoriated. By his contemporaries he was indeed harshly judged—as the arch-collaborationist of the Vichy regime he was condemned to death and executed after a political trial in 1945 when the *résistants* of the liberation administered their purge to avenge the national humiliation of acquiescent defeat. What was long needed was a reasoned study of the man that threw on its subject the light of understanding, not the heat of partisan polemic, and this superb political

biography by a perceptive British historian fills that need.

Laval's actions during World War II must be viewed in the perspective of his behavior during his political career in the 1930's. Several characteristics of Laval's thought emerge. He abhorred Bolshevism. Like many in the 1920's and early 1930's, he considered that the greatest threat to French institutions, if not to European civilization, was the communism embodied in, and perhaps emanating from, the Soviet Union. To this was added the fear of another war, another bloodletting in Europe that could fatally weaken Europe's strength to resist the Communist contagion. Laval believed that European stability could be achieved, and Russia thrust back into Asia, only through the cooperation of the two great Western continental powers, France and Germany.

At the time of his first ministry in 1931 this was a far-sighted hope. The first part was later shared by President Charles de Gaulle—although of course, Laval's Europe did not extend to the Urals. Laval's error was his failure to see that after Hitler's rise to power the terms of cooperation between France and Germany would not be equal, and that as far as the Nazis were concerned, France would be treated as a servant, not a partner, of Germany. Laval had an authoritarian temperament also. This led to some contempt for the slow and often inefficient workings of French parliamentary democracy. Laval was wont to govern by decree laws where possible, and evinced some sympathy with Fascist models abroad. These facts explain his efforts to associate France with Italy and Germany in the cause of what he saw as a new anti-Communist order in Europe, and they explain his unwillingness to fight for republicanism against these other forms of totalitarianism.

By 1940 (despite Laval's assertions that Nazi domination would not last for more than 15 or 20 years, that France could survive in the interim) France was in reality enslaved by Germany, and French inde-

pendence was destroyed. The effects of this disgrace on French morale were not sufficiently appreciated by Laval, nor did he give enough credit to the powers of resistance. And so, with the defeat of Germany, Laval's policies became irrelevant. In the moment of Allied victory, and indeed of a Russian advance into Europe, Laval was condemned for his failures. Warner's impartial and intelligent book, based upon exhaustive research, gives us the opportunity to see Laval's career as a whole and to understand it for what it was.

George W. Baer
University of California
Santa Cruz

THE NUCLEAR YEARS: THE ARMS RACE AND ARMS CONTROL 1945-70. BY CHALMERS M. ROBERTS. (New York: Praeger, 1970. 121 pages, appendices, bibliography and index, \$6.95.)

Three months after the atomic bomb was dropped on Japan by a U.S. bomber, Roberts went to Hiroshima as a member of the U.S. Strategic Bombing Survey. Later, as a journalist, he had many many occasions to report on the onrushing "progress" of nuclear weaponry and on the far less rapid progress of control efforts. This book skims the surface of 25 years and is a useful handbook for anyone under 40.

O.E.S.

POWER AND SOCIETY IN CONTEMPORARY PERU. BY FRANÇOIS BOURICAUD. (New York: Praeger Publishers, 1970. 348 pages and index, \$11.00)

This is a translation of a book published in France in 1967 and written in 1964. The material, therefore, omits the myriad changes in Peru over the past 6 years. As a background work, however, the book is both scholarly and interesting. The author's understanding of things Peruvian is laudable. He not only hears what Peruvian groups say; he hears "between the lines."

O.E.S.

A THOREAU GAZETTEER. BY ROBERT F. STOWELL. Edited by William M. Ho warth. (Princeton, N.J.: Princeton Univ. Press, 1970. 48 pages, maps, illustrations, notes, chronology and index, \$7.50.)

Not quite an atlas, certainly not a history, neither biography, geography nor art book, the Thoreau Gazetteer is something of all of these—and completely enchanting. Stowell acknowledges a wide range of scholarly help from sources as far apart as Concord, Massachusetts, and New Zealand, but unifying the work is the impeccable taste of the author and the editor. O.E.S.

MAN'S POWER. BY KALMAN H. SILVERT. (New York: The Viking Press, 1970. 163 pages, \$4.95.)

Silvert writes in the tradition of the great essayists, buttressing his special pleading not with emotional cant but with reasoned, persuasive argument. The point of these essays—that the ideal political goal is the politics which offers the greatest scope for man to be more human—is presented with assured scholarship and admirable style.

O.E.S.

EMPIRE TO WELFARE STATE: ENGLISH HISTORY 1906-1967. BY T. O. LLOYD. (London and New York: Oxford University Press, 1970. 417 pages, bibliography, appendices and index, \$10.00 cloth, \$2.95 paper.)

Lloyd's volume is the first in a projected series to be called "The Short Oxford History of the Modern World." The aim of the series, as stated by the general editor, is to incorporate new concepts of historical thinking into a comprehensive series that will be both scholarly and imaginative.

Lloyd has compiled and handled a great mass of economic and political data, most of it interesting and pertinent. He writes well. For an American reader, the book plunges too rapidly into detail and the nitty gritty of events; a page or two of background to serve as a framework would have helped. This volume sets a high standard for the books to follow.

O.E.S.

THE MONTH IN REVIEW

A CURRENT HISTORY chronology covering the most important events of June, 1970, to provide a day-to-day summary of world affairs.

INTERNATIONAL

European Economic Community (Common Market)

June 29—The European Economic Community and Israel sign a 5-year preferential trade agreement.

International Labor Organization

(See *Greece*)

Middle East Crisis

(See also *Jordan*)

June 3—Two Israeli children and 2 adults are killed in a shelling attack launched from Jordan. Twenty civilians are injured in the artillery fire.

June 5—On the 3d anniversary of the start of the June War, Israeli planes bomb the Suez area for 11 hours.

June 8—Tanks, artillery and aircraft are engaged in a 5-hour battle along the Syrian-Israeli front.

June 11—The Palestine Liberation Organization announces that its leader, Yasir Arafat, has been appointed commander in chief of all guerrilla forces.

June 14—In a speech in Shebin el Kom, U.A.R. President Gamal Abdel Nasser again says he rejects a cease-fire agreement until Israel withdraws her troops from occupied territories.

Palestinian commandos in Jordan say they will step up their attacks against Israel now that they have strengthened their position in Jordan.

June 17—Israeli forces attack deep into Syria and shell a military camp.

June 19—The editor of *Al Ahram*, leading newspaper in the U.A.R., warns the Arab nations to stop bickering among themselves if they wish the U.S.S.R. to continue to supply costly military aid.

June 21—According to a report by "high

U.S. military officials" printed in *The New York Times*, there has been a substantial drop in the number of flights flown by Soviet pilots over Egyptian territory during the past month.

June 22—Premier Muammar el-Quaddafi of Libya calls for total Arab unity behind the Palestinians in their fight against Israel.

June 24—According to foreign intelligence reports received in Washington, Soviet pilots are now flying combat missions south of the Suez Canal and have taken over all air defenses of Egypt against Israel.

Heavy artillery and tank fighting erupts on the Syrian-Israeli border.

June 27—Heavy fighting on the Syrian-Israeli border continues into the 3d day.

June 29—U.A.R. President Gamal Abdel Nasser flies to Moscow where he is met by Soviet leaders. Nasser is expected to discuss peace plans suggested by U.S. Secretary of State William Rogers. (See *U.S., Foreign Policy*.)

Israeli Prime Minister Golda Meir rejects the suggestion of a temporary cease-fire and withdrawal of Israeli forces from Arab territories held since June, 1967.

June 30—President Gamal Abdel Nasser of the United Arab Republic, who is visiting in Moscow, and Soviet President Nikolai V. Podgorny join in calling for a peaceful solution to Middle East tension.

North Atlantic Treaty Organization (NATO)

June 8—Defense Ministers of 8 NATO countries meet in Venice to discuss strategy in the event of a war with the U.S.S.R. The nuclear planning group comprises the U.S., Great Britain, Italy, West Germany, Norway, Canada, the Netherlands and Turkey.

June 11—A proposal to reduce U.S. military

expenditures in Europe by spreading the costs of NATO defenses more evenly among the European members is endorsed by U.S. Defense Secretary Melvin Laird.

United Nations

June 9—The Security Council votes to extend the U.N. peace-keeping force in Cyprus until December 15, 1970. The expiration date of its present mandate was June 15, 1970.

War in Indochina

June 1—Eight members of U.S. television teams are missing and believed captured in Cambodia. This brings to 24 the number of newsmen reported missing since the start of the Cambodian invasion.

June 2—North Vietnamese attack a base in the northern sector of South Vietnam, killing 46 South Vietnamese soldiers.

June 4—Fighting between Communist troops and government regulars in Cambodia reaches a town within 10 miles of Phnompenh.

June 6—In a Communist drive across northern Cambodia, troops attack Siemreap near the ancient ruins of Angkor Wat.

June 7—The Director of the Agency for International Development (AID), John Hannah, admits that his agency has been used as a cover for Central Intelligence Agency (C.I.A.) operations in Laos for the past 8 years.

June 9—U.S. and Communist troops battle in the Fishhook region of Cambodia.

The town of Saravane in southeast Laos is captured by Pathet Lao and North Vietnamese troops.

June 11—Communist troops seize Angkor Wat.

The Laotian government reports that 320 government soldiers were killed at the fall of Saravane.

June 12—Kompong Speu and Kompong Tralach are attacked by Communist forces. The towns are some 25 to 30 miles west of the Cambodian capital of Phnompenh.

June 13—The bodies of 2 newsmen representing the Columbia Broadcasting System

in Cambodia are found. The body of another C.B.S. newsmen was found on June 3.

Government troops in Laos say they have retaken the town of Saravane from the Pathet Lao.

South Vietnamese President Nguyen Van Thieu says that U.S. troops will remain in South Vietnam for "several years more." June 15—Three attacks by Cambodians and South Vietnamese fail to dislodge Communist troops from Kompong Speu.

3 U.S. news reporters are freed by the Vietnamese Communists. They were captured May 7 in Cambodia.

Kompong Speu is recaptured by Cambodian and South Vietnamese troops. No Communist forces are found in the city.

June 17—The last railway line linking Phnompenh to Thailand is cut by Vietnamese Communist troops.

June 18—The last major highway linking Phnompenh with Saigon is cut by Vietnamese Communist troops.

June 19—North Vietnamese and Vietcong forces attack the provincial capital of Kompong Thom, 80 miles north of Phnompenh.

The U.S. military command in Saigon says that since the April 29, 1970, start of fighting in Cambodia, the number of U.S. deaths in the Cambodian fighting totals 300 and the wounded, 1,330.

Thai Premier Thanom Kittikachorn visits military commanders in Saigon. Unofficial reports indicate that Kittikachorn discussed shifting Thai troops now fighting in South Vietnam to the Cambodian front.

Laotian military intelligence units report that North Vietnamese and Pathet Lao Communist forces are turning southern Laos into an expanded supply base for the war in Vietnam.

June 21—Communist troops continue their pressure on Kompong Thom and attack Tonle Bet in an apparent attempt to seize control of the upper Mekong River and cut the flow of supplies into Cambodia.

U.S. military officials say that U.S. bombing raids on supply lines have ranged

much deeper into Cambodia than the 21.7-mile limit set by U.S. President Richard Nixon.

June 22—Cambodian troops complain that South Vietnamese soldiers sent to recapture the city of Kompong Speu robbed, looted and destroyed property after driving out the Communist troops.

June 24—Arms shipments to Cambodia pledged by the U.S. are being rushed to Phnompenh. Arms in the amount of \$7.9 million are expected to be delivered before June 30, 1970.

June 25—The government of North Vietnam tells representatives of a U.S. peace group that it holds 334 U.S. prisoners of war.

A general mobilization decree is issued by the Cambodian government.

June 27—The last Cambodian army garrisons are abandoned to the Communists in 4 provinces of northeast Cambodia.

Military sources in Cambodia announce that U.S. planes will continue to support ground operations of Cambodian troops after the last U.S. troops pull out on June 30.

June 29—The withdrawal of U.S. combat troops from Cambodia is completed; President Nixon had promised the withdrawal by June 30.

Western European Union

(See *France*)

ALGERIA

June 20—Members of the private American CARE-Medico group which has provided food and medical care to Algerians since 1963 are expelled by the government. More than \$50-million worth of food has been distributed.

ARGENTINA

June 2—Government authorities report that no word has been received by the family of former President Pedro Eugenio Aramburu who was kidnapped May 29, 1970. A statement supposedly from the kidnappers says Aramburu has been killed.

June 8—President Juan Carlos Onganía is deposed by military commanders.

June 9—The 3 commanders of the military junta announce they will return the country to civilian rule. They pledge to name a new President within 10 days.

June 13—The military junta names Brigadier General Roberto Marcelo Levingston as President. Levingston has been serving as a military attaché in the Argentine Embassy in Washington.

June 18—Levingston is sworn in as President. The central bank announces the devaluation of the peso. There will be 4 pesos to the U.S. dollar instead of the previous 3.5 pesos.

BRAZIL

June 11—The West German Ambassador to Brazil, Ehrenfried von Holleben, is kidnapped by terrorists. One Brazilian security agent in von Holleben's car is killed and a second is wounded.

June 15—The government releases 40 political prisoners and flies them to Algeria in response to a demand by the kidnappers of Holleben.

June 16—Holleben is freed unharmed after the 40 political prisoners arrive in Algeria.

CAMBODIA

(See *Intl. War in Indochina*)

CHINA, PEOPLE'S REPUBLIC OF (Communist)

June 6—Specialists in Chinese affairs who are based in Hong Kong report that hundreds of "class enemies" are being executed in China. Trials are held before mass rallies, and the victims are killed by army firing squads without opportunity to speak in self-defense.

June 13—Analysts of Mainland China's affairs stationed in Hong Kong report that the military is continuing to gain power in provincial governments. New assignments show an increasing military influence in provinces bordering the U.S.S.R.

June 17—Chinese government authorities are demanding that students and young people be indoctrinated with "class awareness." Many students were executed re-

cently for rebelling against being sent into the countryside to work with the peasants. June 20—Reports from Hong Kong indicate that large portions of Inner Mongolia have been incorporated into adjacent Chinese provinces.

A government note informs the U.S. State Department that it is not a propitious moment to resume ambassadorial talks in Warsaw.

CZECHOSLOVAKIA

June 24—Former party leader Alexander Dubcek is removed as Ambassador to Turkey.

June 26—Dubcek is expelled from the Czechoslovak Communist party by a majority vote of the party's central committee. The action confirms the vote of the party Presidium taken on May 25, 1970.

ECUADOR

June 22—President Velasco Ibarra closes Congress and the Supreme Court and sends troops into the universities of Quito and Guayaquil, because of disputes over recent tax measures. All Ecuadorians are forbidden to leave the country. Ibarra places the control of all banks under the central bank.

The government forbids sending cables unless permission is granted in advance.

FRANCE

June 3—Demonstrating students drive police from the campus of Grenoble University. The police came to the campus to hunt for a Maoist student leader reported to be hiding in the university.

June 5—Foreign Minister Maurice Schumann attends a 2-day session of the Western European Union, ending a 15-month French boycott of the organization. Former President Charles de Gaulle refused to allow France to attend meetings because of Great Britain's membership.

GERMANY, DEMOCRATIC REPUBLIC OF (East)

June 16—Communist party leader Walter

Ulbricht, in a speech to the party's central committee, suggests that East Germany and West Germany exchange diplomatic representatives and apply for admission to the United Nations before establishing full international relations.

GERMANY, FEDERAL REPUBLIC OF (West)

June 10—An official in the West German Foreign Ministry describes the outcome of exploratory talks between West Germany and Poland as a "notable success." The 2 governments have agreed to start negotiating a treaty on diplomatic relations.

June 14—Voting for the parliaments in 3 West German states indicates a setback for the coalition of Social Democrats and Free Democrats which rules the federal government.

June 18—The government gives final approval to a bill lowering the voting age to 18 in federal elections.

GREECE

June 18—After the International Labor Organization adopts a resolution calling on the Greek government to grant a general amnesty to Greek workers imprisoned for labor union activities, the Greek delegate walks out of the meeting.

INDIA

June 28—Prime Minister Indira Gandhi announces a shake-up of the Cabinet. All major portfolios are changed. Prime Minister Gandhi will assume the additional post of Home Minister.

INDONESIA

June 21—Former President Sukarno dies in Jakarta. He was replaced as President in 1965 following an attempted Communist coup in which he was implicated.

ISRAEL

(See *Intl. Middle East Crisis*)

ITALY

June 9—Interior Minister Franco Restivo announces the returns in voting for new re-

gional administrative districts. The Christian Democratic party, which is dominant in the national legislature, lost ground in regional returns. The Communists, with 28 per cent of the vote, held even with their vote in the 1968 parliamentary elections. The establishment of regional districts is an attempt to streamline the heavy bureaucracy of the central government.

JAPAN

(See also *U.S., Foreign Policy*)

June 22—The government declares its intention of continuing the U.S.-Japanese security treaty for at least another year. Anti-treaty demonstrations by Japanese leftists are small and quiet.

JORDAN

(See also *Intl, Middle East Crisis*)

June 8—Morris Draper, head of the political section of the U.S. Embassy in Jordan, is kidnapped and held for 24 hours before being released by Palestinian commandos.

June 9—Jordanian army forces battle Palestinian guerrillas around the capital city of Amman.

June 10—Palestinian guerrillas kill a U.S. military attaché at his home in Amman. Snipers attack the U.S. Embassy building.

June 11—Fighting continues between army troops and guerrillas. King Hussein takes control of the army and removes the Commander in Chief and the commander of an army division in response to guerrilla demands.

June 12—Commando leaders release some 60 Westerners they had been holding as hostage for their demands on King Hussein. 155 U.S. citizens are flown from Jordan in flights arranged by the International Red Cross.

The International Red Cross reports that fighting between the guerrillas and the army has resulted in at least 700 casualties and 200 deaths.

June 27—King Hussein appoints a new Cabinet that includes many sympathizers of the guerrilla groups.

KOREA, PEOPLE'S DEMOCRATIC REPUBLIC OF (Communist)

June 5—The North Korean radio reports that a "heavily armed spy ship" belonging to the U.S. has been sunk in North Korean waters. The U.S. Department of Defense says that it has no knowledge of such action.

June 6—North Korea is asked to discuss the proposal to return a South Korean fishing craft which was seized by North Korea on June 5.

June 24—The government of Premier Kim Il Sung says it is willing to negotiate a non-aggression treaty with South Korea if the U.S. withdraws its forces.

KOREA, REPUBLIC OF (South)

June 23—The continued presence of U.S. troops in South Korea is absolutely necessary for South Korea's security, according to a statement by President Chung Hee Park.

LAOS

(See *Intl, War in Indochina*)

LIBYA

June 11—At a formal ceremony, Wheelus Air Force base is turned over to Libyan control. The base has been under U.S. operation for 16 years.

PERU

June 29—During a 3-day visit to Peru, Mrs. Richard M. Nixon surveys the damage caused by an earthquake on May 31. She is accompanied by the wife of the Peruvian President.

THAILAND

(See also *Intl, War in Indochina*)

June 1—Volunteer soldiers will be sent to Cambodia to defend the capital from attack by Communist forces, according to Premier Thanom Kittikachorn.

TURKEY

June 16—Rioting breaks out among left-wing militants over proposed changes in labor

laws. Subsequently martial law is declared.

U.S.S.R.

June 5—An article in *New Times*, the Soviet foreign affairs weekly, warns the Indo-chinese Communists against being dictated to by Communist China.

June 10—In a televised speech in Moscow, Premier Aleksei Kosygin reports that talks with Communist China over the border dispute are stalemated. The talks, which began October 20, 1969, have made no progress.

June 11—The Soviet news agency *Tass* announces that the U.S.S.R. will increase its aid to North Vietnam as a result of the U.S. invasion of Cambodia.

U.A.R.

(See *Intl, Middle East Crisis*)

UNITED KINGDOM

June 19—Final results in voting for the new Parliament give the Conservative party a victory with a margin of 30 seats. Following the resignation of Harold Wilson as Prime Minister, Queen Elizabeth II asks Edward Heath to form a new government. The surprise Conservative victory is attributed to a low voter turnout. Conservative Enoch Powell, who ran on a racist platform, wins a seat in Parliament by a large majority.

June 20—Prime Minister Edward Heath names his Cabinet. Among those appointed are: Home Secretary, Reginald Maudling; Foreign Secretary, Sir Alec Douglas-Home; and Chancellor of the Exchequer, Iain Macleod.

Northern Ireland

June 26—Violence erupts in Londonderry as Bernadette Devlin, civil rights leader and member of Parliament, enters prison to serve a 6-month sentence.

June 27—Rioting between Catholics and Protestants in Belfast and Londonderry results in 3 deaths and more than 100 injuries.

June 28—Rioting continues. 5 men are shot

to death and more than 250 are seriously injured. British troops move armored cars into the riot areas, and women and children are evacuated from western Belfast.

UNITED STATES

Agriculture

June 5—The Agriculture Department announces that deficits in Puerto Rican sugar output and increases in domestic requirements will be covered by increased quotas from domestic and foreign sources.

June 12—The Agriculture Department announces that as an economy measure \$167 million in Commodity Credit Corporation certificates will be called in one month ahead of schedule.

June 18—Agriculture Department spokesmen report that only 38 of the nation's 3,129 counties and independent cities have not entered into or made plans to enter into the government's food stamp program or its commodity donation program.

June 19—In the 2d quota expansion in 2 weeks, the Department of Agriculture announces an increase of 100,000 tons in the sugar quota for 1970.

Civil Rights

June 1—A "Washington Plan" that will require all contractors who hold federal contracts to increase minority hiring is ordered by Labor Secretary George Shultz. The contractors must hire minority group members on all projects in the Washington, D.C., area while they work on contracts involving federal funds.

A federal district court judge quashes a Houston, Texas, freedom-of-choice plan for school integration on the grounds that it does not achieve sufficient integration.

June 4—The Equal Employment Opportunity Commission charges racial and sex discrimination against 4 companies and 15 labor unions.

Secretary of Health, Education and Welfare Robert Finch tells a news conference that the victory of George Wallace in Alabama's runoff election will not change administration policy on school integration.

Wallace, who has said he will run for President in 1972, campaigned on promises to stop school integration.

June 6—The Department of Health, Education and Welfare has approved a school integration plan for Columbia, South Carolina, which leaves 4 all-black schools undisturbed. 8 other schools remain 95 per cent black.

June 13—Three federal judges reluctantly order the desegregation of schools in Sumter County, Mississippi. They state their belief that the order will result in "white flight" from the schools.

June 16—Officials of the National Education Association testifying before the Senate Select Committee on Equal Educational Opportunity claim that 5,000 black principals and teachers in Southern schools have been dismissed or demoted as a result of desegregation.

June 18—Riot control police are withdrawn from the streets of Miami, Florida, in an attempt to restore calm to the city, which has been torn by 4 days of racial disorders.

Jerris Leonard, Director of the Civil Rights Division of the Justice Department, pledges federal action to end segregation within desegregated schools.

June 26—Jerris Leonard announces that the department will begin to file suits next week against Southern school districts unless state and local officials can work out desegregation plans for the fall of 1970.

Economy

(See also *Government*)

June 2—Automobile manufacturers report a decline in car sales. Sales in the period from May 21 through May 31, 1970, amounted to 267,548, a decrease of 37,079 from the same period in 1969.

June 5—Officials of the New York Stock Exchange inform the Securities and Exchange Commission that the exchange is working out a plan to insure investors against losses in any failures of stock brokerage firms.

The Labor Department announces that

unemployment rose in May, 1970, to 5 per cent of the labor force.

June 12—The Federal Reserve Board reports a decline of eight-tenths of one per cent in industrial production for May, 1970.

June 14—The Labor Department reports that the sharp rise in unemployment this year has been felt most by the skilled white workers in the aircraft, aerospace and automobile industries in the Middle West and on the West Coast.

June 17—President Nixon formally endorses legislation to create a system of insurance for investors against brokerage house failures.

June 18—The Labor Department announces that the Consumer Price Index, after adjustments for seasonal changes, rose 0.5 per cent in May, 1970.

June 19—The B.F. Goodrich Tire Company, in the wake of a wage settlement that will cost \$70 million over the next 3 years, announces price increases of 5 and 6 per cent on tires and tubes; Goodyear Tire and Rubber Company also announces price increases.

June 23—The Federal Reserve Board suspends interest rate ceilings on large "certificates of deposit" with maturities of 1 to 3 months.

Foreign Policy

(See also *Government*)

June 2—It is announced by the State Department that the U.S. will provide arms and equipment to ethnic Cambodians living in Thailand who go to Cambodia for military service.

June 4—Following a meeting of President Nixon and Venezuelan President Rafael Caldera, Ronald L. Ziegler, the White House Press Secretary, announces that the U.S. will increase imports of Venezuelan oil during the second half of 1970.

June 5—President Nixon names Henry Cabot Lodge as his personal envoy to the Vatican.

June 7—Senate testimony discloses that under a secret agreement entered into in 1967, the U.S. has been paying Thailand \$50

million a year for sending a combat division to South Vietnam; the U.S. also agreed to increase military assistance by \$30 million over a 2-year period and to supply Thailand with Hawk antiaircraft missiles.

June 8—The House of Representatives votes 223 to 101 to send a 12-man fact-finding mission to Southeast Asia to study all aspects of U.S. military involvement there.

June 10—U.S. Ambassador to Colombia Jack Hood Vaughn resigns.

June 11—Sonn Voeunsai, the new Cambodian Ambassador to the U.S., presents his credentials to President Nixon.

President Nixon assumes the direction of efforts to assure the safety of about 24 Americans who are being held hostage by Palestinian guerrillas in Amman and to protect other Americans in Jordan. (See also *Jordan*.)

In a 52-to-47 vote, the Senate rejects a proposal that would have given the President the authority to retain troops in Cambodia if he thought such action necessary to protect the safety of American forces in Vietnam.

June 20—Secretary of Defense Melvin R. Laird, who is spending 5 days in Spain conferring with government officials and defense chiefs, emphasizes the desire of the Nixon administration to see Spain enter NATO.

June 22—In a policy statement issued by the White House, the President says that the U.S. will vigorously oppose any attempts by foreign governments to restrict the operation of United States airlines.

June 24—The Senate votes 81 to 10 to repeal the Gulf of Tonkin resolution.

June 25—At a news conference in Washington, Secretary of State William P. Rogers announces a broadly based diplomatic effort in the Middle East to encourage Israel and the Arab countries "to stop shooting and start talking" under the auspices of the United Nations. The essence of the U.S. plan is a 90-day cease-fire.

A day after the breakdown of talks with Japan on voluntary agreements on textile

trade, Secretary of Commerce Maurice H. Stans indicates administration support of legislation to impose import quotas on textiles.

June 26—Speaking at a General Assembly meeting of the Organization of American States, Secretary of State Rogers says that a new international agreement is needed to stem the rising tide of political terrorism.

June 27—A report from the House Committee on Government Operations recommends that South Vietnam devalue the piaster; the committee also recommends wage and price controls and rationing.

June 30—The President announces the completion of the U.S. incursion into Cambodia and the withdrawal of all U.S. ground personnel; he appeals to North Vietnam for serious peace negotiations.

The Senate passes the foreign military sales bill, which authorizes \$300 million in credit sales of arms. The measure, which now goes to the House, includes the Cooper-Church amendment which would prevent the President from spending any funds in the Cambodian conflict without congressional consent.

Government

June 1—According to Dr. Thomas K. Glennan, the Office of Economic Opportunity's research director, the agency intends to award planning grants to 1 or possibly 2 localities to establish "educational voucher" systems. Under the plan, parents who are dissatisfied with their neighborhood schools could "buy" alternative education which would be reimbursed at the current per-pupil expenditure of the local public school.

June 2—Secretary of Health, Education and Welfare Robert H. Finch announces that he has dismissed Dr. Stanley F. Yolles. Dr. Yolles, who has been director of the National Institute of Mental Health and Assistant Surgeon General of the Public Health Service, says that he resigned.

June 5—The U.S. Forest Service has published a report by an investigative team that is critical of the Forest Service's op-

erations; the report complains of policies and practices that favor the timber industry and other commercial interests.

Administration sources report that all federal agencies have been ordered to report how much they spend on public relations and to show why this amount should not be reduced by 25 to 50 per cent.

June 6—The President says he will replace Robert H. Finch as Secretary of Health, Education and Welfare; Finch is to become an adviser to the President with the title of counselor. The President nominates Under Secretary of State Elliot L. Richardson to become Secretary of Health, Education and Welfare.

Following a meeting of the President's Council on Youth Opportunity with the President, Vice President Spiro Agnew announces that the administration will seek an additional \$50 million for expansion of job opportunity programs for young people this summer.

June 8—Secretary of the Interior Walter J. Hickel discloses that he has asked the army to delay work on the Cross-Florida Barge Canal for 15 months to permit a study of the effects of the canal on the ecology of the region.

June 10—President Nixon announces the creation of the Office of Management and Budget; Secretary of Labor George P. Shultz will be the director. The new office will replace the Bureau of the Budget. James D. Hodgson, Under Secretary of Labor, is nominated to succeed Shultz as Secretary; Caspar W. Weinberger, chairman of the Federal Trade Commission, will become deputy director of the Office of Management and Budget with primary responsibility for the budget; John D. Ehrlichman, Assistant to the President for Domestic Affairs, is to become executive director of the new Domestic Council; Robert P. Mayo, who has been director of the Budget Bureau, will become Counselor to the President.

Dr. James E. Allen, Jr. is dismissed as Commissioner of Education by Robert Finch.

The President proposes a revised and expanded version of the welfare program which he hopes will be more acceptable to Congress than the measure now stalled in the Senate.

The Office of Economic Opportunity announces a \$1.95-million grant to encourage and train more doctors, dentists and other medical personnel to serve in poor neighborhoods.

A compromise \$2.76-billion, 3-year extension of the hospital aid program is passed by the House; the measure, which was previously passed by the Senate, now goes to the President.

June 11—The President asks Congress to approve legislation canceling all federal oil leases in the Santa Barbara Channel.

It is announced at a news conference in Washington that the federal government is establishing regulations to control the use of methadone and to gather proof of its effects in the rehabilitation of narcotics addicts.

June 13—President Nixon names a 9-member commission to be headed by William W. Scranton, the former governor of Pennsylvania, to study the causes and consequences of campus unrest and to recommend ways of avoiding incidents in the future.

June 15—Robert L. Kunzig, administrator of the General Services Administration and chairman of the President's Federal Procurement Task Force on Minority Business Enterprise, discloses that the government has let 90 contracts totaling more than \$14 million this fiscal year, without bidding; the contracts were awarded preferentially to minority businesses.

Secretary of Health, Education and Welfare Robert Finch names Dr. Terrel H. Bell as Acting United States Commissioner of Education.

June 16—President Nixon announces the organization of the President's Commission on Financial Structure and Regulation; the 14-member commission will be headed by Reed O. Hunt.

June 17—In a nationally televised address on the economy, President Nixon says that

he will continue his basic strategy against inflation and recession; while rejecting outright direct wage-price controls, the President names 2 new governmental bodies, the National Commission on Productivity and the Regulations and Purchasing Review Board.

The House approves, 272-132, a bill to lower the voting age from 21 to 18 in all federal, state and local elections beginning in 1971. The measure, which also extends the Voting Rights Act until 1975, now goes to the President.

Secretary of the Interior Walter J. Hickel imposes a ban on the use of pesticides on more than 500 million acres of federal lands; the prohibited chemicals include DDT, Aldrin, 2,4,5-T, dieldrin, endrin, DDD, and mercury compounds.

President Nixon eases the oil import quotas, authorizing the purchase of 100,000 more barrels of foreign crude oil a day and 40,000 more barrels a day of home-heating fuels.

June 18—In an effort to break the legislative logjam created by protracted debate on Cambodia, the Senate agrees to meet evenings to act on other legislation.

Nathan M. Voloshen, lawyer and lobbyist, pleads guilty in a federal court to conspiring with Dr. Martin Sweig, former aide of House Speaker John W. McCormack, to use the prestige of the Speaker's office to defraud federal agencies.

The President asks Congress to overhaul and consolidate federal welfare services and add new aid for child foster care and adoption; the proposals call for an increase in aid of \$255 million a year.

June 19—Attorney General John N. Mitchell announces that a special federal grand jury will be convened on June 29 to investigate the fatal shooting of 2 students at Jackson State College in Mississippi last month.

June 20—Secretary of the Interior Walter Hickel announces the establishment of Biscayne National Monument off the southeastern coast of Florida.

Conferences between the Internal Revenue Service and the American Council on

Education result in guidelines providing that colleges and universities that give time off to students and faculties to take part in political campaigns will have to add the time to the school year or run the risk of losing their tax-exempt status.

June 21—Attorney General John Mitchell and John E. Ingersoll, director of the Bureau of Narcotics and Dangerous Drugs, announce at a news conference the arrest of 130 persons in the largest nationwide narcotics raid in history.

June 22—President Nixon signs a bill lowering the voting age to 18 but calls for a court test of the constitutionality of the measure, which also extends the Voting Rights Act until 1975.

The President vetoes a bill for the construction and modernization of medical facilities, terming it fiscally irresponsible.

The Senate votes 79 to 5 to modify an amendment to include a provision recognizing that the President, as Commander in Chief, has the authority to take steps to protect the lives of American forces "wherever deployed."

June 23—The Public Land Law Review Commission presents its report to the President and Congress. It recommends that the land that is federally owned be retained by the government and recommends major changes in the management and use of federally owned land.

A federal district court judge in Baltimore orders expunged from court records the report of a special grand jury which charged a contractor with conspiracy to corrupt members of Congress. The judge says that the report would never lead to prosecution because Attorney General Mitchell has refused to sign indictment papers. The Justice Department claims that there is insufficient evidence.

June 24—Elliot L. Richardson is sworn in as Secretary of Health, Education and Welfare. Robert H. Finch is sworn in as counselor to the President.

June 25—Congress approves the \$50 million in additional funds requested by the President to provide summer jobs for youth.

The House votes 279 to 98 to override the Presidential veto of a bill to modernize and construct medical facilities; the measure now goes to the Senate.

June 28—Mrs. Virginia H. Knauer, chairman of the President's Committee on Consumer Interests, announces the creation of a federal-state relations office; the office is to encourage the formation of state consumer protection offices, to urge effective and comprehensive protection laws and to advise the state offices of significant developments in consumer protection.

June 29—A study group appointed a year ago to report to the Secretary of Health, Education and Welfare recommends sweeping reforms in medical care; recommendations include more emphasis on group practice, prepaid health care plans, and ultimately national health insurance.

June 30—The Senate overrides the President's veto of the \$2.76-billion authorization bill for the construction and modernization of medical facilities; the House has already voted to override the veto.

Labor

June 9—The Labor Department announces new guidelines designed to eliminate discrimination against women in jobs paid for with federal funds.

June 10—United Rubber Workers ratify a contract with Goodyear Tire and Rubber Company ending a strike that started on April 20. (See also *Economy*.)

June 16—The National Labor Relations Board extends its jurisdiction to cover private colleges and universities. The board says that such institutions have a clear impact on interstate commerce and will have to operate under the labor-management rules that govern other big businesses.

June 22—Wildcat strikes of soft coal workers break out in 3 states when it becomes known that the administration is considering a \$40-million reduction in mining and mineral research; government spokesmen acknowledge that such a reduction would severely hamper research aimed at improving the health and safety of mine workers.

Members of the Atomic Trades and Labor Council ratify a new contract with Union Carbide, ending a strike at the company's Oak Ridge, Tennessee, facility which began on April 15, 1970.

June 25—Striking coal miners return to work after receiving the assurance of Senator Harrison A. Williams (D., N.J.) that his Senate Labor Committee will investigate their charges that federal mine safety legislation is not being enforced.

Military

June 3—A cutback of 10 F-111F's is ordered by the Air Force to save money.

June 5—Seven prototypes of a new bomber are to be designed and built by North American Rockwell and General Electric Company, the Air Force announces.

June 9—Captain Thomas Willingham will be released from active duty with all charges against him dismissed, according to an Army announcement. Willingham had been charged with unpremeditated murder of 20 Vietnamese civilians on March 16, 1968. Lack of evidence is cited as the reason for dropping the charges.

June 15—The Army issues a report by the Special Civilian Committee for the Study of the United States Army Confinement System. The report, finding inadequacies in the Army's prisons and stockades, recommends reforms.

June 16—President Richard Nixon issues a proclamation setting July 1, 1970, as the date of the next draft lottery drawing. The drawing will affect the order in which men born in 1951 will be drafted into the military in 1971, or the order in which they will be drafted in later years if they have deferments in 1971.

Selective Service Director Curtis W. Tarr announces stringent new guidelines to be applied by draft boards in determining if men can qualify for exemptions as conscientious objectors under the new Supreme Court ruling. The guidelines include the requirement that beliefs must be the product of "some kind of training" and be part of a "system of belief" beyond

a purely personal moral mode. (See also *Supreme Court*.)

June 19—The Air Force announces it has deployed multiple warheads on U.S. intercontinental missiles; the first flight consisted of 10 missiles and one launching facility.

June 23—The Navy announces that it is awarding a \$2.1-billion contract to Litton Industries to build 30 destroyers over the next 8 years.

June 24—Selective Service officials outline elaborate plans to redesign draft lottery procedures to insure complete randomness.

Politics

June 2—George Corley Wallace defeats Governor Albert P. Brewer in the Democratic primary runoff for the governorship of Alabama.

June 13—Former Vice President Hubert H. Humphrey, the unsuccessful Democratic candidate for the Presidency in 1968, announces his candidacy for U.S. Senator from Minnesota.

June 17—Kenneth A. Gibson, a Negro, defeats incumbent Hugh J. Addonizio in the mayoral runoff election in Newark, N.J.

June 22—The Columbia Broadcasting System offers free radio and television time over its networks to whatever principal political party is not in power in the White House; the company also agrees that the opposition party can use radio and television to raise funds at times other than the regular campaign period. The Democrats ask the Federal Communication Commission to guarantee that opponents of the President's policies will receive free time on the networks to respond to the President's televised advocacy of those policies.

June 24—Senator Mike Mansfield (D., Mont.), taking advantage of free television time on a national network, counters the President's request for swift congressional action on administration proposals in the field of economics by charging that Congress has already given the President more

authority "than he wishes, apparently, to use against the rise in prices."

June 26—Vice President Spiro Agnew, on behalf of the Republicans, and Speaker of the House John W. McCormack, on behalf of the Democrats, sign a pledge promising clean politics in the 1970 congressional campaigns.

Supreme Court

June 1—The Supreme Court rules 5 to 2 that federal judges may bar workers from striking in violation of no-strike clauses in collective bargaining contracts.

The Supreme Court postpones until the October, 1970, term a decision on capital punishment; the postponement leaves intact a judicial freeze that has stopped all executions in the U.S. for the past 3 years.

June 9—Harry A. Blackmun is sworn in as an Associate Justice of the Supreme Court.

June 15—In a 5-to-3 decision, the Court rules that men may be exempted from the draft as conscientious objectors for purely moral and ethical reasons and that such reasons need not be prompted by religious beliefs.

June 22—The Court, in a 5-to-3 ruling, declares that no person may be denied a jury trial in a prosecution that could result in a sentence of over 6 months imprisonment.

VENEZUELA

(See *U.S., Foreign Policy*)

VIETNAM, REPUBLIC OF (South)

(See also *Intl, War in Indochina*)

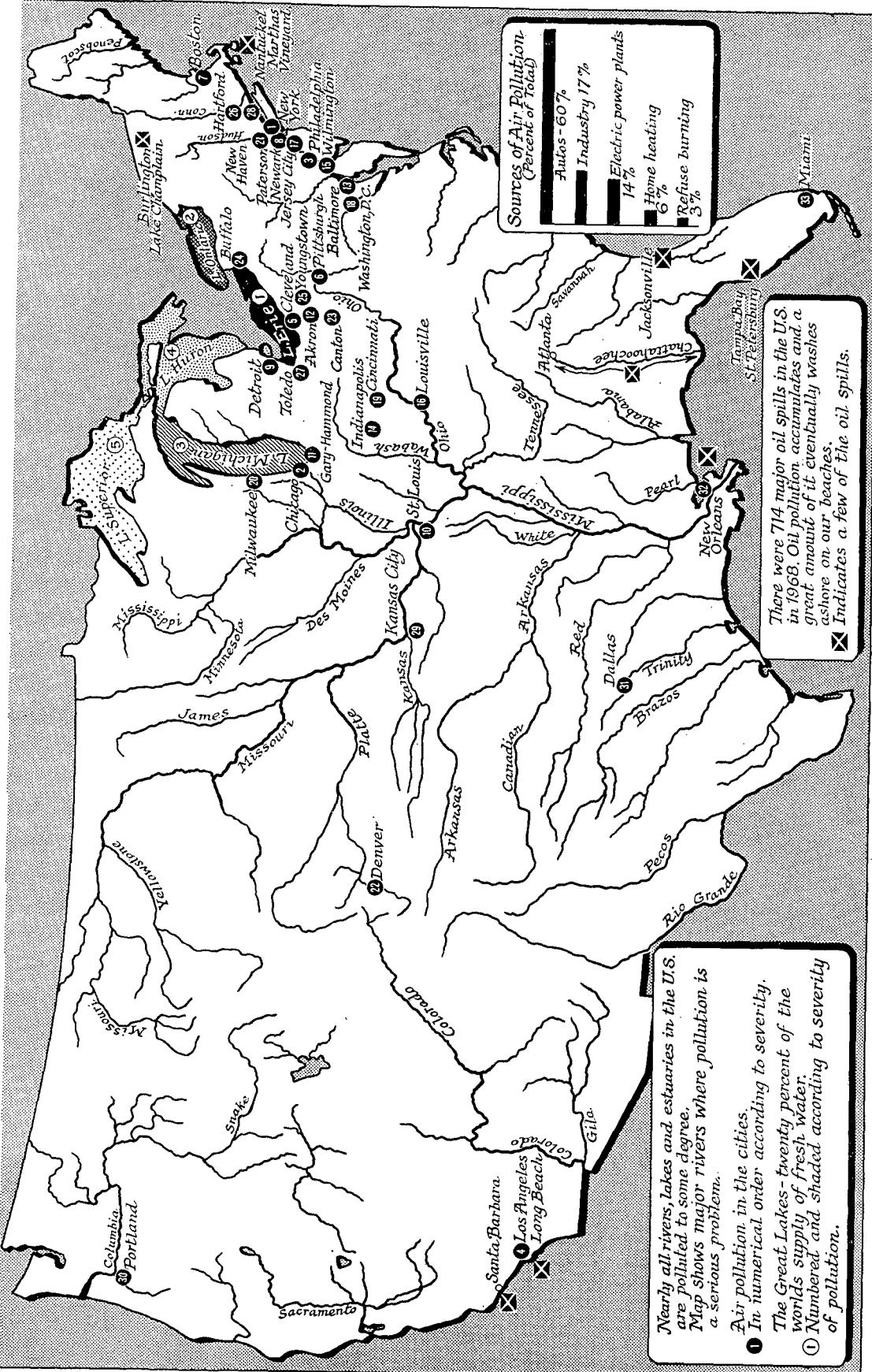
June 24—The National Assembly passes a bill giving President Nguyen Van Thieu extraordinary powers over the economy for the next five months in order to deal with the rapid inflation. The inflation, which raised living costs by 30 per cent last year, has already increased living costs by 24 per cent so far this year.

June 28—Economics Minister Pham Kim Ngoc tells reporters that South Vietnam will need \$200 million in aid from the U.S. to tide it over a severe inflationary crisis.

UNITED STATES: AIR AND WATER POLLUTION

Map by Russell Lenz

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